

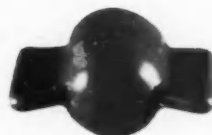
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Art. 111

The Council of Industrial Design

November 1958 No 119 Price 3s

# Design



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PERIODICALS

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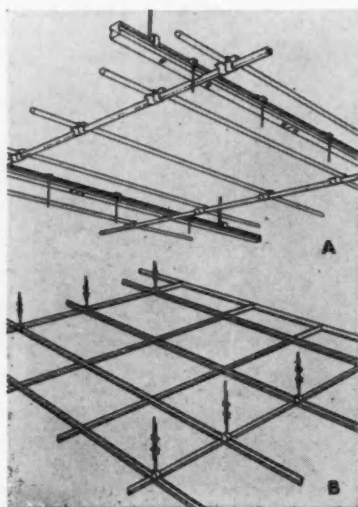


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atlas leads in lighting | **suggestions for conference and reception rooms**



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The diffusers and baffles are available in different colours and forms, thus enabling the designer to explore pattern, colour, texture, mood and style with complete freedom.

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(a) Atlas Trunking and Unistrut assembly—the support for fluorescent lighting equipment.

(b) Appearance from above of the Sylvalume grid.



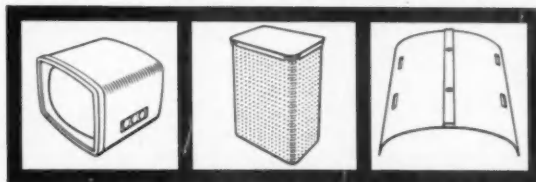
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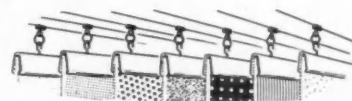
## Heal's Contracts throw new light on a subject

The subject in this case was the many-hued range of carpets in the new BMK London showrooms. The problem: to avoid the vagaries of natural daylight so that prospective buyers could select a carpet under the same kind of lighting the carpet would be seen in after it was bought. The raw material: two floors in a newly erected block (in its primary "shell" state).

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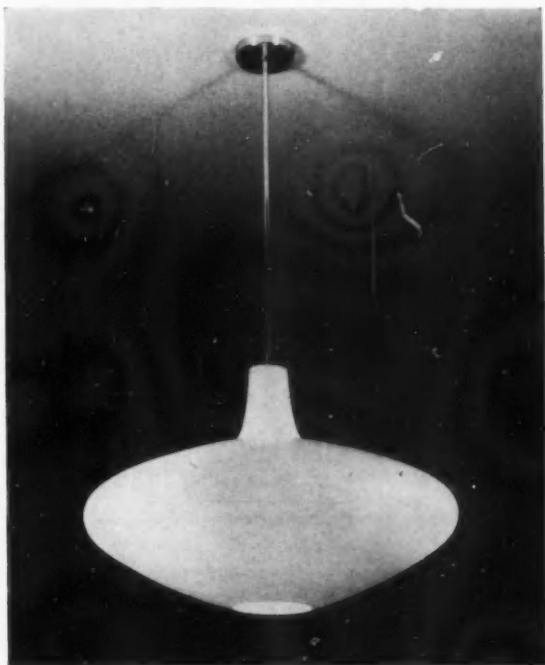
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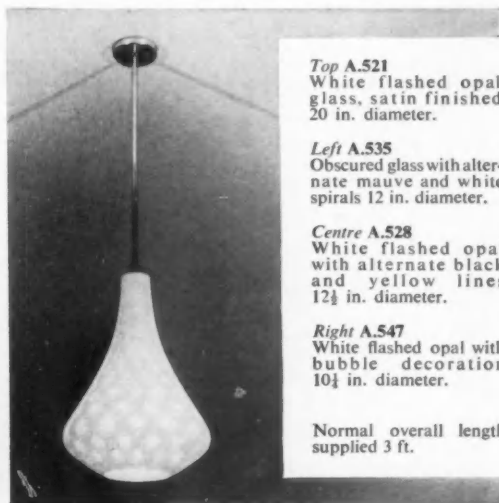
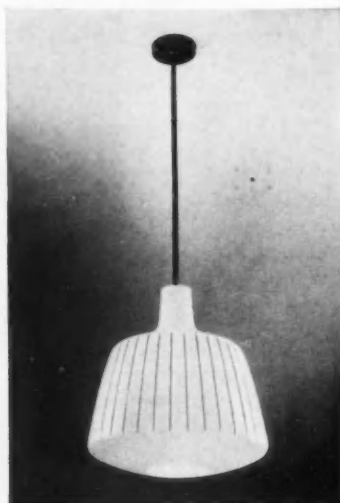
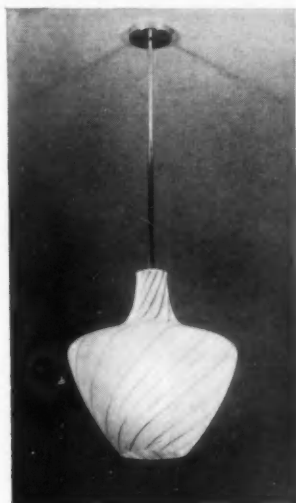
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## interesting new fittings

*in  
decorated  
glassware*



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White flashed opal  
glass, satin finished  
20 in. diameter.

**Left A.535**  
Obscured glass with alter-  
nate mauve and white  
spirals 12 in. diameter.

**Centre A.528**  
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and yellow lines  
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bubble decoration  
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**TROUGHTON & YOUNG**

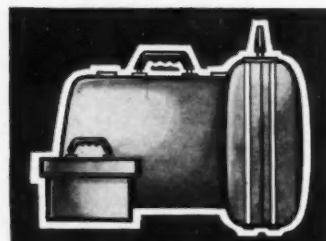
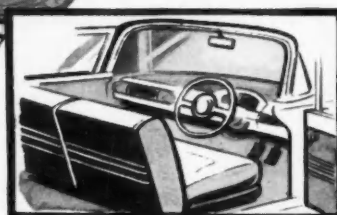
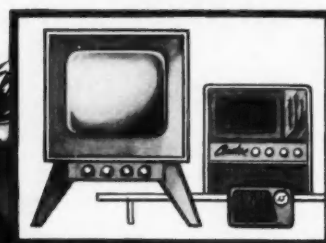
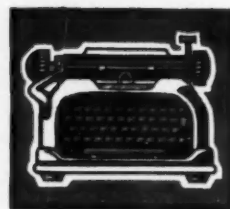
**TROUGHTON & YOUNG (Lighting) LTD.,** *The Lighting Centre, 143 Knightsbridge, London, S.W.1.*  
Phone: KENsington 3444. and at 46 Rodney Street, Liverpool 1.

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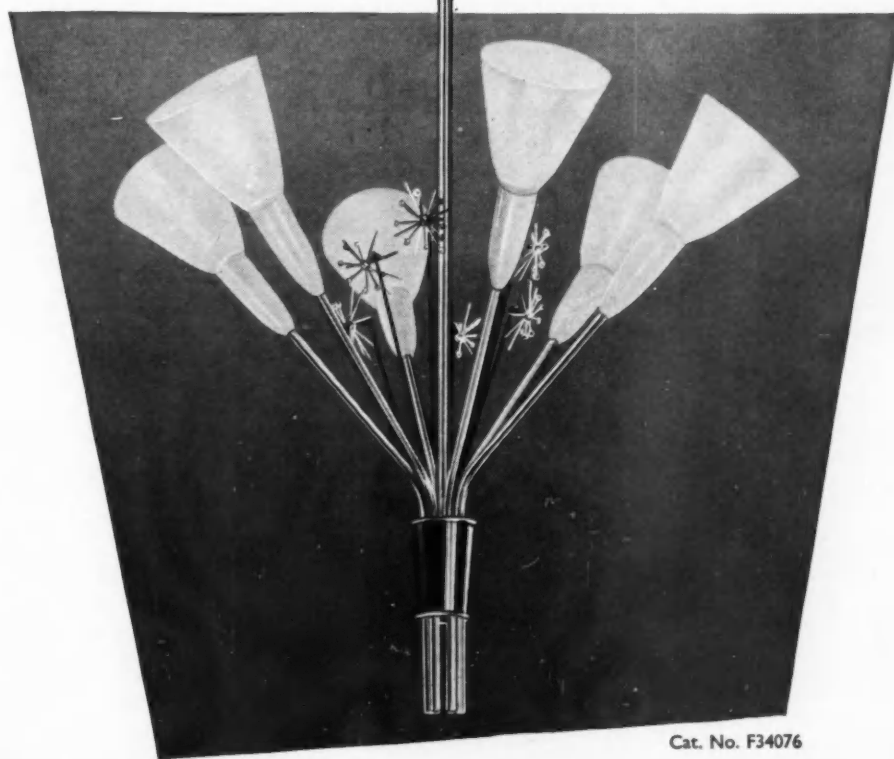
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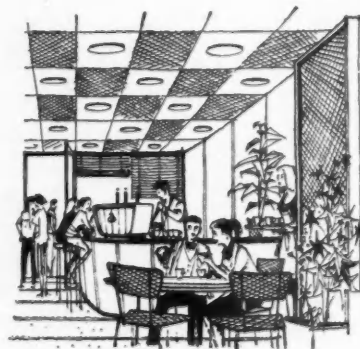
the most versatile meshwork ever made

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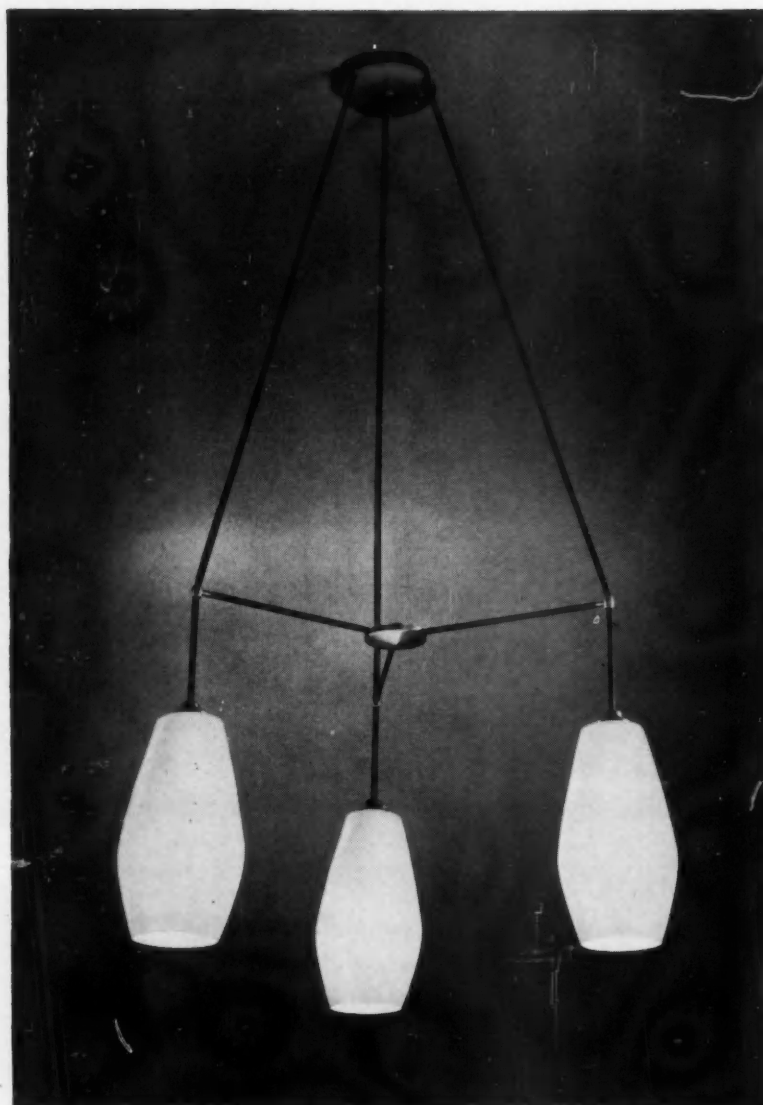
The Wrighton 'Corinthian' was designed by NIGEL V. WALTERS F.S.I.A. and selected by the COUNCIL OF INDUSTRIAL DESIGN for display in the DESIGN CENTRE, London.

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# WRIGHTON

# Satina fittings

win a Design Centre 1958 award



Extract from the judges' comments,  
published in *Design*

'The judges have chosen this range of pendant fittings and this particular shade (though others almost as good are available in the range) for these fine points—the quality of the satin-finished opal glassware, which is attractive both lit and unlit; the delicacy of the bracket arms; the unostentatious use of brass in combination with black rods; and the general elegance of the range in all sizes.'

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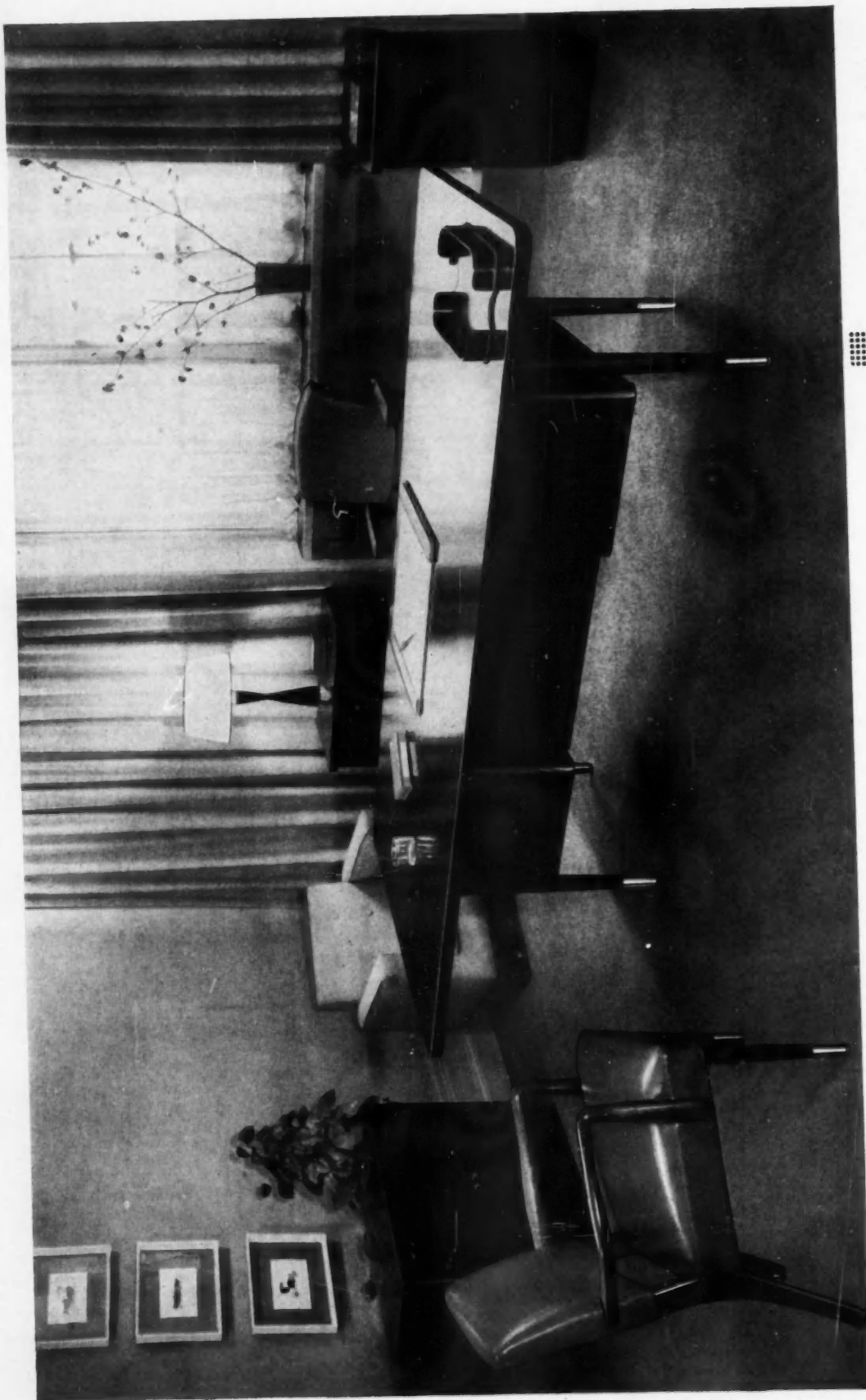
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## *Barclays Bank Limited*



STAPLES CANTILEVER TABLE

*Industrial designers  
and Vietum*

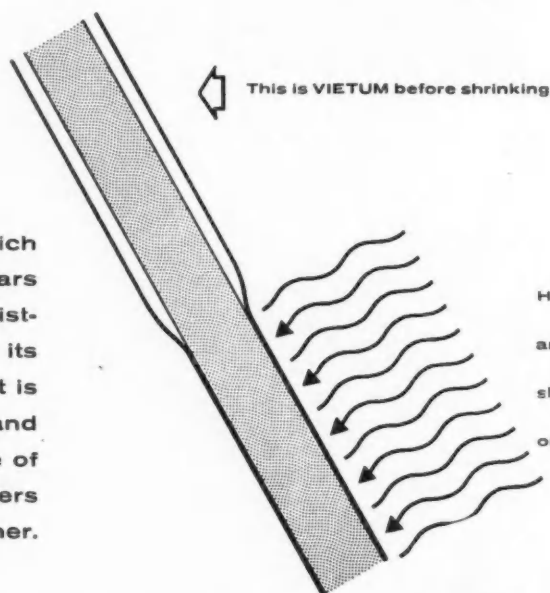
Vietum is a contractile PVC tubing which shrinks under heat on to rods, tubes and bars of various materials and shapes. It is resistant to oils, spirits, acids and alkalis and its electrical insulation is almost absolute. It is supplied in a range of beautiful colours and it can be plain or ribbed. Vietum's range of application is practically endless and offers great opportunities to the industrial designer.

TRADE **VIETUM** MARK  
SHRUNK ON SLEEVING AND COVERS



Vietum covers  
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An illustrated, technical booklet will  
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This is VIETUM before shrinking

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with Everflex  
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For information about Geon PVC write for Booklet No. 9

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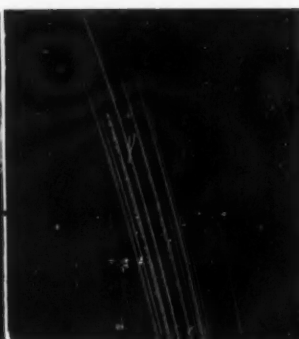
SALES AND TECHNICAL SERVICE DEVONSHIRE HOUSE PICCADILLY LONDON W1 HYDE PARK 7321



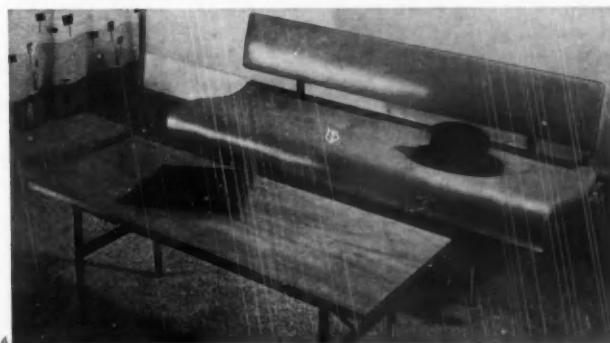
1. Penthouse mess room for the Engineering and Research Divisions of The Bowater Paper Corporation Limited, Northfleet, Kent, in collaboration with the Architects Farmer & Dark F/R.I.B.A. Photograph by courtesy of Messrs. Holland & Hannen & Cubitts Ltd.
2. Departure lounge London Airport, Architect Frederick Gibberd, C.B.E., F.R.I.B.A., M.T.P.I.
3. Lunch room for Upjohn of England Ltd., Crawley. Architects Russell Diplock Associates, B.A.R.C.H., A.R.I.B.A., A.M.T.P.I., Architects and Planning Consultants.
4. Part of a range of contract seating designed for durability in public buildings.
5. Conference room for the Engineering Division of The Bowater Paper Corporation Limited, Northfleet, Kent, in collaboration with the Architects Farmer & Dark F/R.I.B.A.

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*Manufacturers are  
invited to consult  
the Council of  
Industrial Design's*

## RECORD OF DESIGNERS

*a free service of  
recommendation  
and introduction  
of designers  
to industry*

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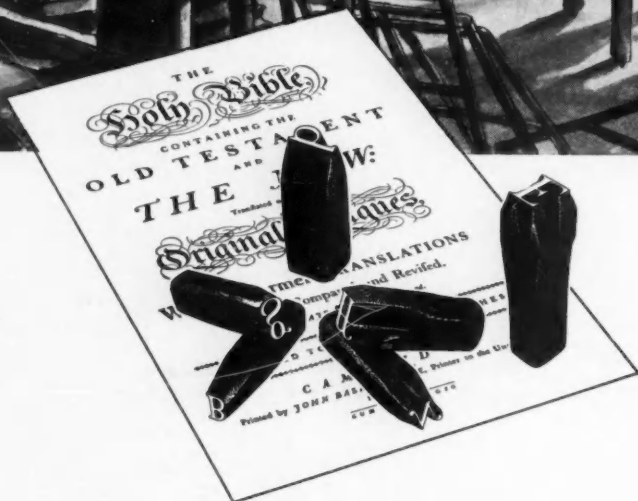
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## PROFILE OF A CREATIVE MIND

### No. 17 *Type Founder*

*At a time when England was lagging behind in typography, John Baskerville (1706-1775) seized the initiative by designing a type face so elegant and distinctive that it astonished and delighted the librarians of Europe.*



Seven long years of experimenting with type, ink and paper were to pass before Baskerville could produce a letter that pleased his fastidious eye. His labours were not in vain. Although some may have thought his italic a trifle thin and wiry, the new face had an elegance, freedom and symmetry not found in others — his roman letter, in particular, being open, legible, and full of individuality.

To show off the full beauty of his type,

Baskerville selected the finest paper, prepared rich inks; every book was a masterpiece, a gem of typographic art. How surprising, then, that during his lifetime Baskerville's type was not much valued in his own country. Today, the place of Baskerville among the nobler type faces is unchallenged.

*In I.C.I., creative minds are constantly searching for new products and processes,  
and for improvements to existing ones.*



# Design and engineering

THE TWO UNSIGNED ARTICLES which open this issue of DESIGN debate a subject that has for a long while troubled those who have the best interests of industrial design at heart. The case for crediting designers for their work ranges from the crystal clear to the impenetrably obscure according to the context. The nearer one gets to the studio or the easel the clearer the argument for signatures and credits; the nearer to the drawing office, the clearer the case for anonymity or at least for sharing the kudos, for the more complicated the product the more brains and hands go to its fabrication. This is emphatically so in the engineering industries, which have a long and respected tradition of teamwork and hence of anonymity for individuals.

But the two articles that follow, for all their apparent opposition, end on a similar note – namely the ultimate integration of the industrial designer into the engineering team.

This is a problem that is both urgent and recognised. Several of our largest engineering companies have over the last few years been devoting increasing attention to the appearance as well as the function of their products with correspondingly encouraging results. But there are many in the same field who revolt at the very mention of design in any but the most technical sense, with results that are often correspondingly discouraging.

At root this is probably a matter of confidence and of human relations. There is no doubt that the industrial designer, or the appearance designer as he is sometimes called, has much to contribute to the well-being of our engineering industries. Equally there is no doubt that some designers and many apostles of good design have gone about offering their services and advice in a flat-footed, inept way, thereby confirming and perpetuating preconceived prejudices.

Let us hope that one outcome of the Conference on Industrial Design and the Engineering Industries that is to be organised this month jointly by the CoID and the Birmingham Exchange and Engineering Centre, may be a better understanding of the role of the industrial designer and a clearer idea of what he can and cannot contribute and thus of what he should and should not claim. At the same time it should be remembered that good design is the objective no matter whence it comes. Industrial designers as such have no prescriptive right to a place in any industry. As in medicine, so in industry: prevention is better than cure. Had the printers, for instance, not abdicated their responsibilities for design, had they retained their artistry as their craft grew into an industry, there would have been no call for the emergence of the typographer as a separate professional specialist.

P.R.

# WHO SHOULD TAKE THE

*Should one man or the team be named as the originator of a product?*

## Give credit to the team

THE OBJECTION to giving credit to any individual for 'designing' an engineering product depends on the simple fact that no single individual is entitled to that credit.

Design in engineering practice can mean two things. Conventionally it is the term applied to all the activities which culminate in a product being exactly specified in the conventional forms needed by the factory to make it. Assembly drawings, piece part drawings, group sheets, components and final inspection and test specification, operating, servicing and repair instructions, and so on. Or it may apply merely to one aspect of this process, an important but not necessarily vital part, the introduction into the design process of considerations of aesthetic quality.

The function of the industrial designer is to introduce this aesthetic element into that team activity, which is the very essence of engineering practice. And this has to be done by influence and compromise and not by imposition. What is aesthetically desirable has to be balanced against what is functionally necessary, what is commercially needed and what is economically possible. It has to take its place with other desirable qualities which may be, to some extent, mutually incompatible.

The only way of achieving an integrated and balanced design is to make the aesthetic designer a member of the team of scientists, design engineers, draughtsmen, test engineers, service engineers, packaging engineers and so on, who adjust their demands to allow for incompatibilities and who create corporately a design which it would be outside the capabilities of any one of them to conceive.

An aesthetic designer working as a member of the team, an equal among equals, contributes much more than the creations of his own knowledge and imaginations. For, by putting forward ideas which require modifications to be practicable or which demand modifications in other aspects of the design, by understanding and thrashing out the necessary compromises,

he stimulates the other members of the team into working in his interest and seeing through his eyes. In a harmonious team a particularly bright contribution to appearance could be sparked off a service engineer, or the industrial designer himself originate under the influence and fro of argument a brilliant sequence of assembly operations. That is how the process should work and how it must work if we are to be freed from those grating insincerities known as 'styling'.

Since, then, the aesthetic design function in engineering must be provided by a specialist of equal status with his colleagues of the team taking his share of responsibility more according to his ability than to his function—he cannot be entitled to more than the credit which devolves on any member of a team for his indefinable share in the team's achievement.

It may be argued—in fact it is the only possible argument for personal credit for industrial designers in engineering—that while every design team should include an appearance expert, few such men in fact yet exist in employable form. Engineering teams cannot assimilate the long-haired youth from an art school, but they will (perhaps under protest) work with the consultant designer who has succeeded in persuading the managing director that good design is good business. And that to live, consultant designers have to publicise their names.

To accord personal publicity to consultant designers who, inevitably, lack the power and circumstances to integrate themselves thoroughly into the engineering team is to create an injustice, because public credit is being given for a job which, if done better, could carry none. And an injustice cannot be justified pragmatically.

The engineering industry is well aware of the need for better design. In every respect except appearance it feels it has done its job well and if our educational authorities will give both engineers and designers the overlap in education that they need, the engineering teams will assimilate the aesthetic requirements as they have assimilated the functional and economic ones.

# THE CREDIT FOR DESIGNING?

of a product? The case for and against is argued on these pages

## Give credit to the designer

In an ideal state it might well be that all design should be anonymous. The nameless monks and masons of the Middle Ages did well enough without any credits. On the other hand Renaissance Italy gloried in the names and reputations of its artists with no serious adverse effects, at least in the early years, and this tradition continued elsewhere until the dawn of the Industrial Revolution.

Would Chippendale, Wedgwood or de Lamerie have had so lasting an influence had they been simply Mr X, Mr Y and Mr Z? It could, of course, be argued that it would have been very much better had they remained anonymous craftsmen since in that case later generations, instead of being mesmerised by these old masters, might have had more incentive to show their own paces. But that is not the point.

The fact is that we are today faced with so base a level of design throughout so wide a range of industry that any and every means should be adopted to stop the rot. One of the reasons for the decline, perhaps the chief reason, was the gradual disappearance of the designer from the higher councils of industry, an inevitable extrusion perhaps as mass production and national distribution took over from hand production and direct maker-to-customer service. At all events by the end of the first phase of the Industrial Revolution the situation had been reached in which the designer had rightly to be described by John Gloag as "the missing technician". And by and large that is still the position today, more particularly perhaps in the design-wise closed shops of the engineering industries.

So the problem is how to reinstate him, how to win for him again the role that all seeing men now recognise that he should perform. Is it by suppressing all reference to him? Or by billing him in the largest type possible? Experience in America and elsewhere suggests the latter. Personalise, personalise and yet personalise. That is one formula, full of pitfalls and insincurities no doubt, but at least it has the virtue of leading to competition among manufacturers to get

themselves the services of a designer. And, if only for the sake of argument, one should be allowed to assume that the employment of designers may lead to better results than their exclusion.

There is, of course, at this point a small commercial consideration. In a world of big names and stars he who commands the biggest star stands to gain at the box office and he who cannot afford a top name builds his own man up. In short, many firms have found it profitable to boast of their designers. And it follows that, if a company invests in a designer, whether staff or consultant, and then builds him up with credits and publicity, it is likely that his board will be more inclined to listen to him than if he had no name or if no-one outside the circle of his immediate colleagues knew of his existence.

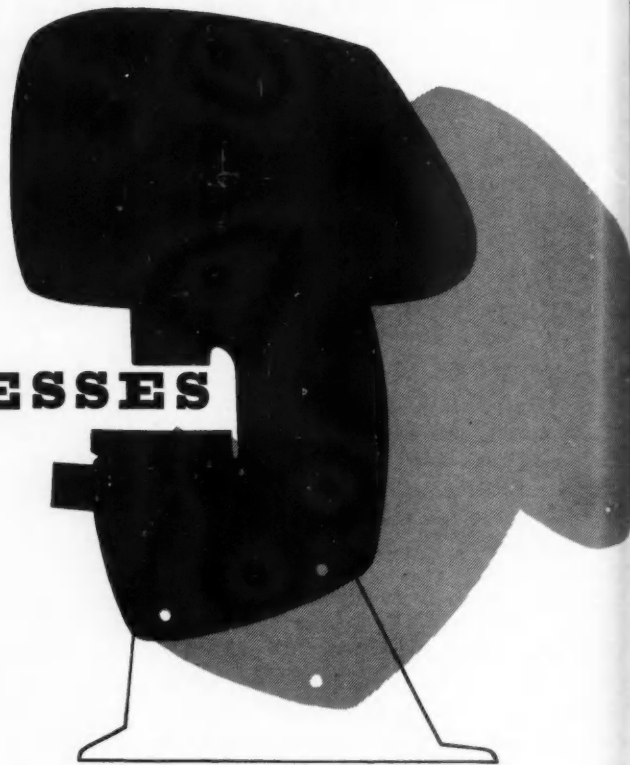
If there is any substance to the thoughts that in industry after industry design is not all that it should be and that one solution is to give more power, authority and status to the designer, then he should be given that power, authority and status. If crediting him with more than his deserts is likely to do this, it seems a small price to pay.

The time is not yet to argue this controversy on questions of just allocations of kudos. In the interests of improving design in this machine age the scales must for the time being be tipped in favour of the designer who has for so long been knocking on the door. It is in the interests of all that he should be named and acclaimed, at least until such time as he is in fact as well as in theory accepted into the team on an equal footing with other specialists. When that happens he himself will probably be the first to see the other point of view, for by then he will be an insider like the rest.

*Readers' views on this debate would be welcomed.*

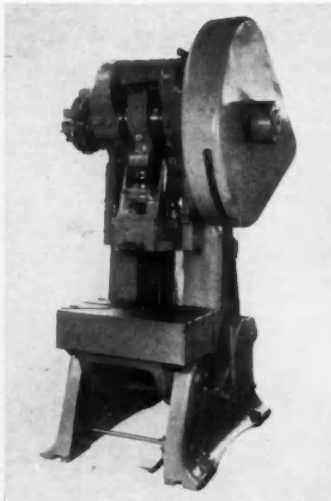
# INCLINABLE PRESSES

LEONARD GROSBARD

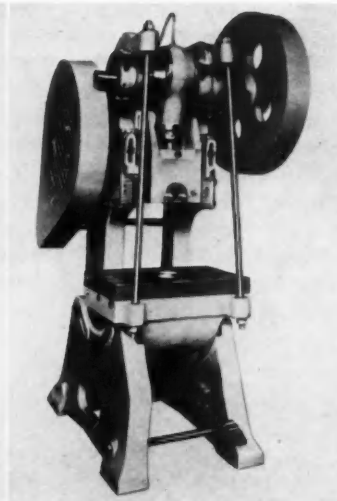


## *British presses*

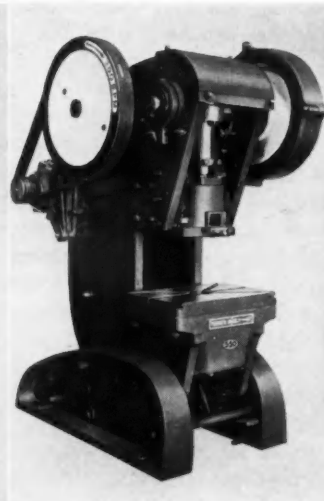
*Hordern, Mason & Edwards Ltd*



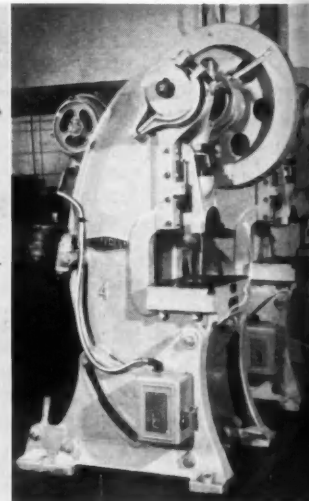
*The Press & Shear Machinery Co Ltd*



*Turner Brothers (Birmingham) Ltd*



*The Butterley Co Ltd*



This article on inclinable presses is the first in a series surveying the standards of design of those machine tools most commonly used in modern industry. The series will be illustrated by both British and foreign machines together with case histories of interesting new developments.

IT IS BECOMING more and more desirable to review British and foreign machines together, because the negotiations for a Free Trade Area now taking place leave little doubt that some form of customs union will be agreed upon. This being so, it can only be a matter of time before the FTA buyer makes the same sort of comparison untroubled by present considerations of place of origin, import duty, licences, etc. The traditional markets for British machine tools outside the UK lie in the Commonwealth, where the industrialisation schemes of India, Canada, South Africa, etc, have made great demands on our manufacturers. But there are signs that the Commonwealth's rate of expansion has been slowing down during recent years while that of the 17 OEEC countries, which will comprise the FTA, is increasing. In the years 1951-55 for example, Europe's imports increased by 20 per cent while those of the Commonwealth rose by only two per cent.

The Economist Intelligence Unit in a recent report\* attempts to evaluate the effects that membership of the FTA will have on British trade and production. It points out, taking 1955 as the base year, that the inter-FTA trade in metalworking machinery was valued at £70 million. Of this figure Germany accounted for £40 million, Switzerland for £12 million and the UK

\*Britain and Europe The Economist Intelligence Unit Ltd 1957 155.

for only £8 million. "These figures can be considered", says the report, "a fairly good indication of Britain's competitiveness in European markets."

This conclusion is felt in some quarters to be rather misleading, not enough allowance having been made for the fact that Government exhortation to manufacturers to export to dollar areas allowed German and Swiss manufacturers to gain ground in Europe. Some firms feel that there will be a different story to tell in a few years time. This will depend not merely on plans for invading the European market, but also upon meeting the competition, design for design, in Europe and the UK, where more and more European manufacturers are appointing agents; a process bound to be accelerated with the coming FTA, since the UK is the most lucrative market of all the OEEC countries. That industrial design will play an increasing role in meeting this competition is almost a foregone conclusion, as the indications from this report point to a growing awareness in the FTA countries of the need to make machinery "pleasing to the eye . . . which can be an important selling point".

### Inclinable presses

The workhorse among power presses for sheet metal working is the open-fronted, inclinable press. These presses are inclinable to facilitate the removal of the pressed components. For simple operations such as stamping out discs the press remains vertical and the discs fall through the tool into boxes underneath. But in forming, say, a cup, the press would be inclined, allowing the cup to fall through the back into the boxes. This avoids the necessity of clearing it from the top of

*For comparative purposes all presses are shown without safety guards.*

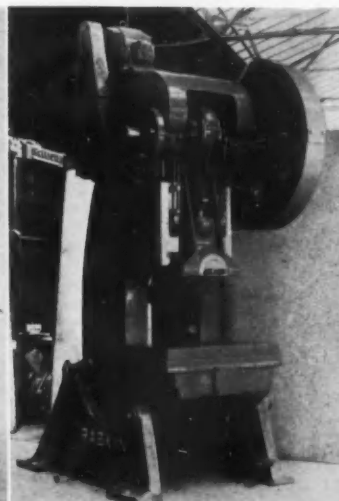
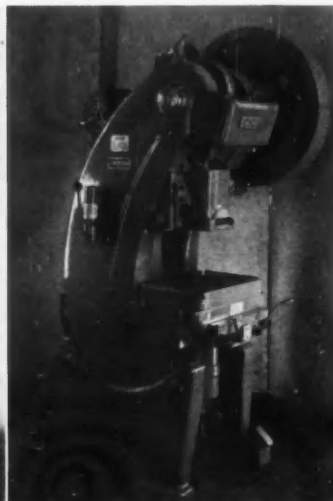
### Continental presses

L. Schuler AG, Germany

Weingarten Maschinenfabrik AG, Germany

Len Sirojexport, Czechoslovakia

Ateliers H. Raskin SA, Belgium



the tool, for it is ejection and loading times which control the speed of operation.

The manufacturers in this industry, where reputations are made on factors not easily open to assessment, all apparently work to the same specification but quote widely varying prices, the difference being one of quality in design and manufacture. A press frame designed to be rigid is relatively expensive to produce, but to a customer interested in keeping his press tool maintenance costs to a minimum it is money well spent. However, not all customers take such a long-term view and where price considerations are paramount the competition is keen.

There are many British manufacturers of power presses, some of them very old established companies going back well over 100 years, when the great reputation of the British engineering industries was established. Of the variety of presses they make the one which has had the most recent attention paid to its appearance is that of E. W. Bliss (England) Ltd, and the story of this firm's efforts in this connection is reported in detail on the following pages. Hordern, Mason & Edwards Ltd, on the other hand, which is one of the largest producers of power presses in Europe and one of the companies of the American Cincinnati Group, has made no attempt at conscious styling but has achieved a quite reasonable integration of appearance with technical design.

### European developments

Among the European presses one of the most interesting and well detailed is that of L. Schuler AG, Goepingen, Germany. This firm has been making presses since 1839 and pays a great deal of attention to matters of appearance. In the UK market and without import

duty the prices of Schuler presses, which would be equivalent to the FTA prices, are about one-third higher than those of the best British manufacturers. When competing in Europe, however, the difference is not so pronounced as the Schuler prices are reduced by about 10 per cent and the British ones are increased by about the same amount (for packaging, freight, insurance, etc). The other German press illustrated is made by Weingarten Maschinenfabrik AG, while up to the standard of the Schuler, is nevertheless of high order.

Although a number of the presses were seen at factories and exhibitions it must be admitted that in the majority of cases there was no alternative but to rely upon the brochure. This is a process that leaves much to be desired, but we were at no greater disadvantage than a great many overseas buyers. And when comparing machines by means of brochures it soon becomes apparent that sales literature is extremely important. The effect on the reader, especially where the reader is a potential customer, of a well designed brochure presenting the product in an attractive way is not to be underestimated. By comparison with the foreign brochures received, the British ones did not come off at all well, and even more to the point none of the companies approached had published a brochure in a foreign language (one manufacturer said that when he receives an enquiry from a foreign country he translates his existing brochure and sends the typescript). Even the best brochure, promoting the right feeling of confidence in the products and the firm concerned, can be irritating if it is not printed in a language the reader can understand, although of course no manufacturer can be expected to print a catalogue in every language.

## Case history 35-ton open-fronted inclinable press. MAKER E. W. Bliss (England) Ltd

Bliss power presses have a world-wide reputation for performance and quality. They were manufactured in the USA until shortly before the second World War and exported to the rest of the world in the knocked-down condition to be assembled and sold by their overseas agents. In 1933 when the British Government imposed heavy import duties on this class of machinery, the Bliss company, faced with the prospect of losing the British and Commonwealth markets formed a new company, E. W. Bliss (England) Ltd, to manufacture its wide range of power presses at a new factory in Derby.

They have been successful from the beginning. The war and then the post-war sellers' market in capital goods, together with the Bliss reputation, assured them a position in a highly competitive industry.

Sensing changing market conditions and the possibilities opened up by the proposed Free Trade Area, the managing director, Rodney Fry, decided in 1956 to prepare for the change over to a buyers' market by redesigning the complete range of presses. Where his approach differed from that of

his competitors was in deciding that in dealing with the problems of appearance he would use the services of a consultant industrial designer, and he chose A. B. Kirkbride to work with some of the firm's senior engineers under the direction of the chief development engineer, Harold Ashworth.

Deciding a policy of redesign is not too difficult; putting it into practice is much more so, especially when Mr Kirkbride was the first industrial designer that Bliss's engineers had ever worked with.

### Uncompromising brief

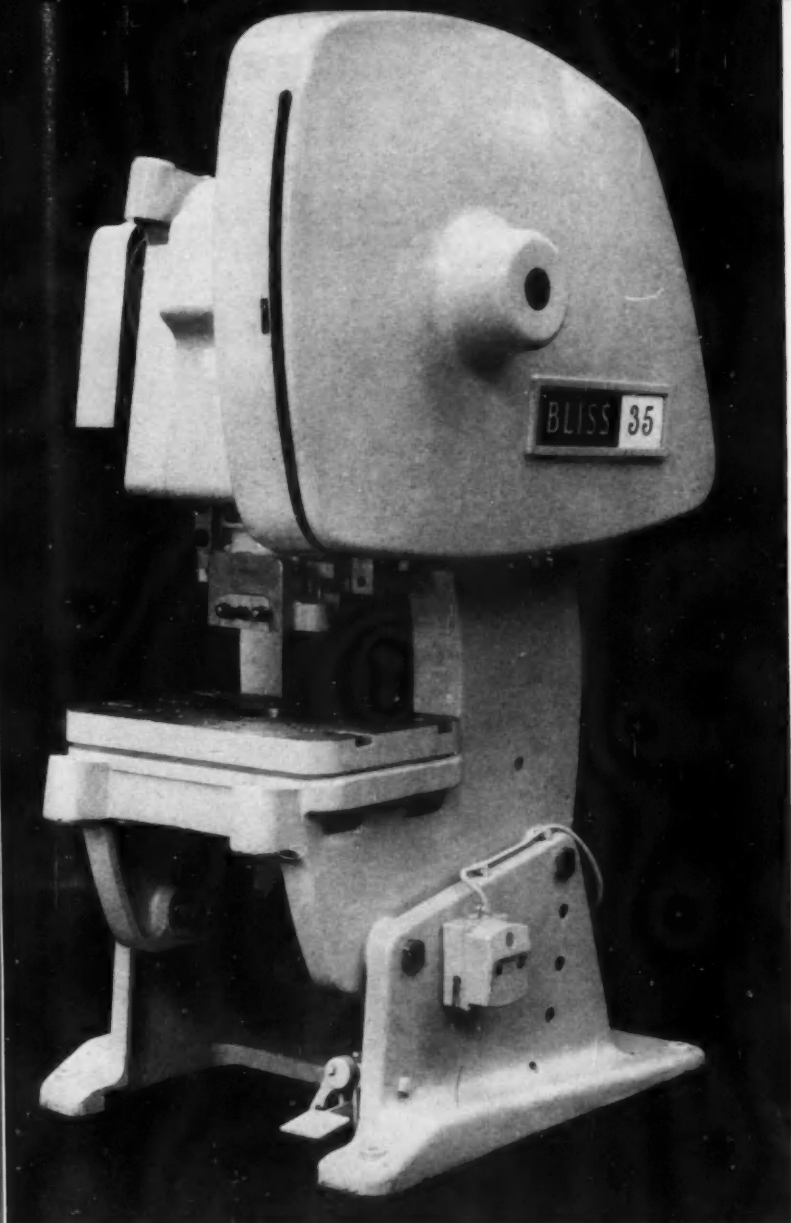
Because the open-fronted inclinable press is the bread and butter of the firm's production, it was decided that this should be the first model to be redesigned. The existing design, 2, was an uncompromising accretion of idiosyncrasy incorporating a number of outdated technical features. For instance, to change over from single to continuous stroking the flywheel guard had to be removed to get to the mechanism. The lubrication was done by oil

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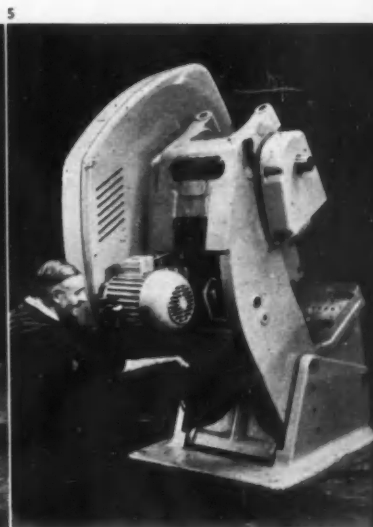
**1** The first production model. A number of fundamental changes were made to the specifications after most of the design had been decided upon. This can be seen by comparison with **3**.

**2** This 20-ton version of the original press, now superseded by the new design, can be compared with the appearance of the other British presses on page 24.

**3** Wooden scale model of the new press, designed by A. B. Kirkbride.

**4** On the new press the strengthening ribs have been transferred to the inside of the pedestal casting. This simplifies problems of finish and maintenance and improves the appearance.

**5** The press is inclined to speed the removal of the pressed components. The inclining mechanism, which on the previous model was stiff, is now fitted with a ball thrust race. Also the position of the electric motor, which was at the top in the old design, **2**, is much more convenient.





6 Harold Ashworth, chief development engineer, left, discusses the drawings of the new press with A. B. Kirkbride, the designer, centre, and C. Colley, assistant to Mr Ashworth.



7 and 8 The old Bliss nameplate, 7, has been replaced by a new design which is standard for the whole range of open-fronted presses, 8; the number indicates the tonnage of the particular press. The new plate compares well with the first attempt on the scale model and is a distinct improvement on the earlier one, although the numerals particularly have a somewhat amateurish and temporary appearance.

bottles. Pipes and wiring were festooned about the frame and the inclining mechanism was stiff. All these points had been noted down by the companies' engineers during the preceding years of manufacture and maintenance, and this was their chance to correct them. After discussing the way in which these problems were to be dealt with the firm gave Mr Kirkbride his brief, "go away and design us the best looking press".

He produced some preliminary sketches and a wooden scale model 3, which makes an interesting comparison with the first production model, 1, and the original press, 2.

#### 50 years of use

The most striking feature of the new press, and its most controversial, is the glass fibre flywheel guard. Apart from suggesting that there might be a square flywheel inside, it gives one the feeling that a shape not quite so ephemeral should have been incorporated into a design which may well be in use for 50 years. In this respect it is instructive to compare the overall appearance with that of the Schuler press.

The glass fibre guards are lighter than metal ones to handle on the few occasions when it is necessary to get at the flywheel for maintenance purposes. They are also much easier to finish. The one-piece pedestal casting, 4, makes the press almost the only one without a tiebar. This is an important feature; when the press is used in the vertical position the finished pressed components fall through the bolster into boxes on the floor. On presses with tiebars these heavily loaded boxes have to be lifted over the tiebars and with a high speed press this happens fairly frequently. The one-piece pedestal casting also simplifies production, as the

cross holes can be bored from a common datum ensuring easy assembly. On previous models it was a day's work for a skilled fitter to assemble the frames.

Lubrication is by a semi-automatic one-shot hand-operated pump which meters the correct quantity of oil to the main and connection bearings, etc. The inclining mechanism is of the ratchet lever-operated screw type with a ball thrust race enabling the press to be inclined with a minimum of effort. To improve the appearance and incidentally to simplify problems of finish the strengthening ribs were all transferred to the inside walls. The effect of this can be seen by comparing 4 and 2. It was also Mr Kirkbride's intention to bring the foot of the pedestal to the inside of the main frame, 3, but he was persuaded that for technical reasons this was not possible.

The nameplate, 8, which gives simply the name of the maker and maximum tonnage of the press, breaks away from the traditional plate, 7, which had a barely recognisable American eagle poised above the words, "Bliss Built".

#### New ground

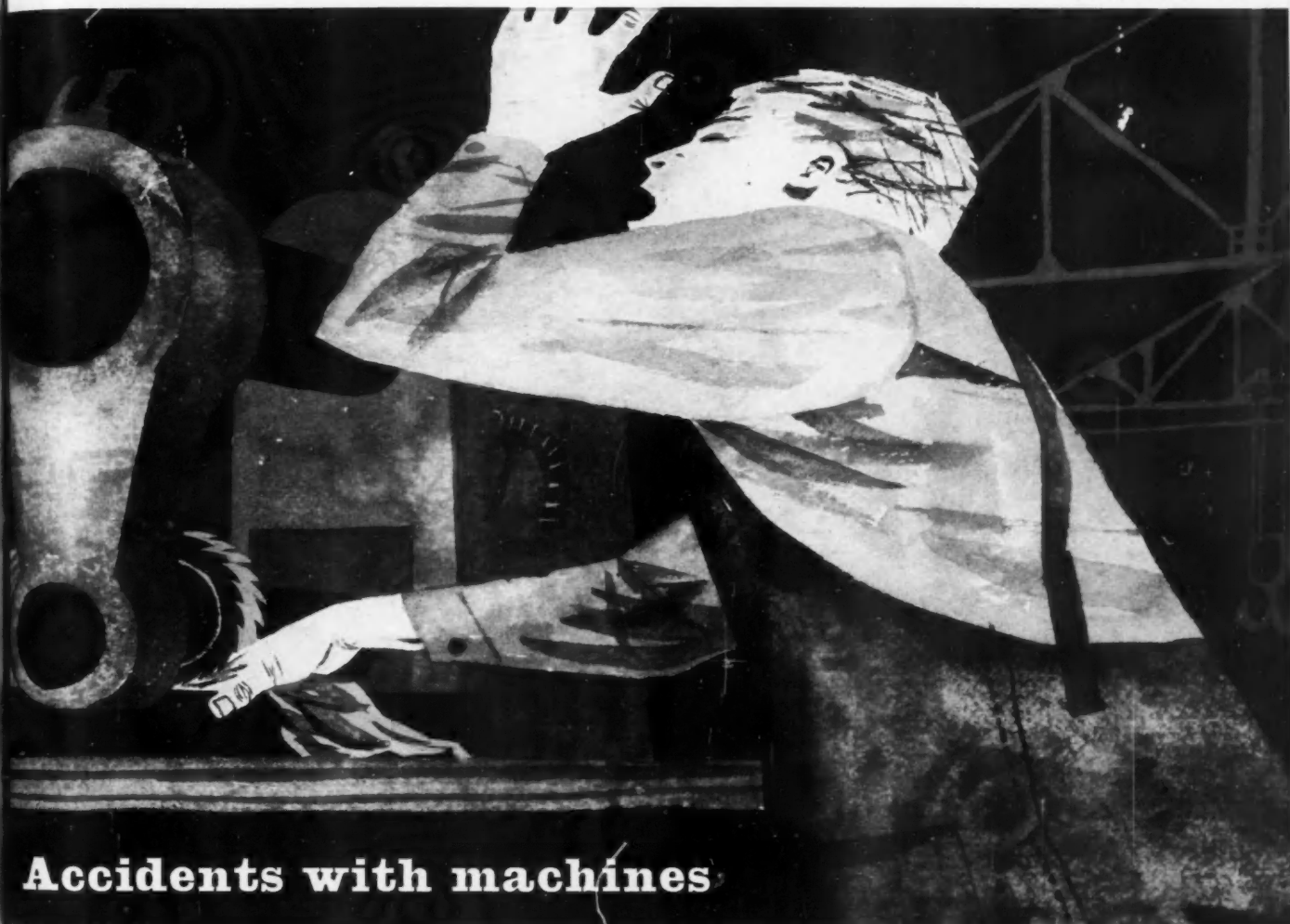
There is no doubt that this design breaks new ground in an industry more than usually conservative about the appearance of its products. That the new press is not wholly successful is understandable in the circumstances as no industrial designer can be expected, for instance, to "go away and design the best looking press". The successful integration of appearance and technical factors is never easy, especially when the technical ones are complex. The machine is not a work of art, nor is it primarily the work of artists, but is the result of close and continuing collaboration between the engineer and the industrial designer.

## A DESIGN INVESTIGATION

B. SHACKEL

*Regard for the importance of individual human life, is said to be one of the cornerstones of Western civilisation. Are designers violating this principle by failing to design safe usage into their products? Of 174,713 factory accidents reported in 1957, 651 were fatal.*

*drawing by Negus/Sharland*



### Accidents with machines

"IT CANNOT BE TOO FREQUENTLY STRESSED that safety of machinery should begin at the design stage. Given a clear understanding by the designer of the conditions under which a machine is to be used, it is certain that a design can be achieved which will embody sound safety standards incorporated within the machine as manufactured . . . Bearing in mind the large numbers of firms and their staffs who are concerned with the design of machinery whose capabilities for inflicting injury are considerable, it must be said that there is a great deal of ignorance as to techniques of safety and safe design."

This quotation from the *Annual Report of the Chief*

*Inspector of Factories for 1956*,<sup>1</sup> throws a compelling challenge to the industrial designer. If he cannot in his inner conscience reject the charge of ignorance, then he may well bear at least some responsibility for the injury to anyone who has an accident with his product. The chief inspector's report shows that the greatest single source of accidents (27 per cent of the grand total) is the handling of goods. Therefore, as part of the examination of the validity of the charge, a visit was made to the 1958 *Mechanical Handling Exhibition*. Within 20 minutes a 'model accident' through unsafe design was regrettably seen. In showing how a certain

<sup>1</sup> H M S O Cmdd 329, 98 6d.

fork-lift truck could, with a special attachment, lift and change its own heavy batteries, the demonstrator was leaning over to see why the battery would not rise. One hook of the hoist bent suddenly under the strain and the cross-arm flew up to strike him above the eye, fortunately without causing serious injury. It appeared that the battery on the new model had stuck to the paint; obviously, however, the hook was designed with an inadequate margin of safety and had never been tested properly or stress analysed, see for example: *Analytical methods for product designing* (DESIGN September 1956 pages 29-33).

Examples of inadequate guards, poor visibility and difficult access confirmed the general impression. *Shoppers' Guide* and *Which?* reveal some startling findings about the safe design of some domestic products. In general the chief inspector's charge seems valid.

### Accident prevention

This situation seems to have arisen because of the dichotomy between the two major facets of accident prevention, namely (a) good design of equipment, and (b) proper use of equipment. Both these facets depend for their success upon comprehensive foresight of all the ways in which the equipment may be used, or misused. Both require continuous attention, publicity and encouragement to achieve and maintain a high standard among the actual people doing the work. Safe usage however has received and still does receive far greater attention than does safe design.

### Safe usage

There is probably a historical and a legal background to this bias. The Factory Acts, and therefore HM Factory Inspectorate, place the onus on the employer to ensure safe working conditions. The user/employer can be prosecuted for endangering his employees by allowing them to use equipment which is unsafe or inadequately guarded in any way. But there are only specific instances in which the designer/manufacture can be prosecuted for selling an unsafe design. Yet nowadays, with ever-increasing specialisation, many user/manufacturers inevitably rely on the expertise of the designer/manufacture, and some must find that at least in design for safety the expertise is inadequate (in 1956 there were 215 convictions on fencing and construction of machinery causing death or injury).

Most work in accident prevention is therefore aimed at using as safely as possible the equipment already installed. HM Factory Inspectorate, the Royal Society for the Prevention of Accidents (RoSPA), the British

Safety Council and local safety groups, are between them covering this whole field of safe usage in a very comprehensive way. However, even the chief inspector's report, although pointing the need for safe design more clearly and concisely in the sentence quoted, concentrates elsewhere almost entirely on safety and errors in actual use. The same general situation obtains in the annual report for 1957, recently published.<sup>2</sup>

### Safe design

There is thus a need for more work upon the problem of safe design. The Institution of Mechanical Engineers is drawing up a code of practice for the guarding of machinery; this code, when published, should be of great value. The British Standards Institution has published standards relating to the safety of many products; but all too often these standards seem to have been ignored. The factory inspectorate's permanent exhibition at the Industrial Health and Safety Centre<sup>3</sup> demonstrates the importance of safe design and is of great potential value to equipment designers, but very few visit it at present. (However, the layout needs improving if visitors are to learn on their own. At present the thread of meaning is given by an inspector taking parties round. Ideally each problem section should be self-explanatory, colour coded and serially indicated by coloured and numbered arrows.) The Ministry of Labour has recently published a new series of illustrated booklets under the title *Safety, Health and Welfare*. These promise to be helpful, especially No. 3, but still the emphasis tends to be upon attachments to existing machines rather than on re-thinking in the design stage.

Much more could surely be done.

### Prevention at the source

It is inferred that, even when an unsafe design is a direct contributory cause, an accident report is not automatically sent by the factory inspectorate to the original manufacturer of the equipment involved. Even without compulsory powers surely the automatic reporting of accidents - and of suspected unsafe designs seen by inspectors on their factory visits - is a very necessary step towards encouraging proper accident prevention at source.

One also wonders whether the inspectorate uses such exhibitions as that on mechanical handling, to survey a wide range of equipment and to send polite advisory

*continued on page 35*

<sup>2</sup> HMSO, Cmnd. 521, 5s.

<sup>3</sup> 97 Horseferry Road, SW1.

<sup>4</sup> *Safety devices for hand and foot operated presses*, HMSO, 1958, 20d.

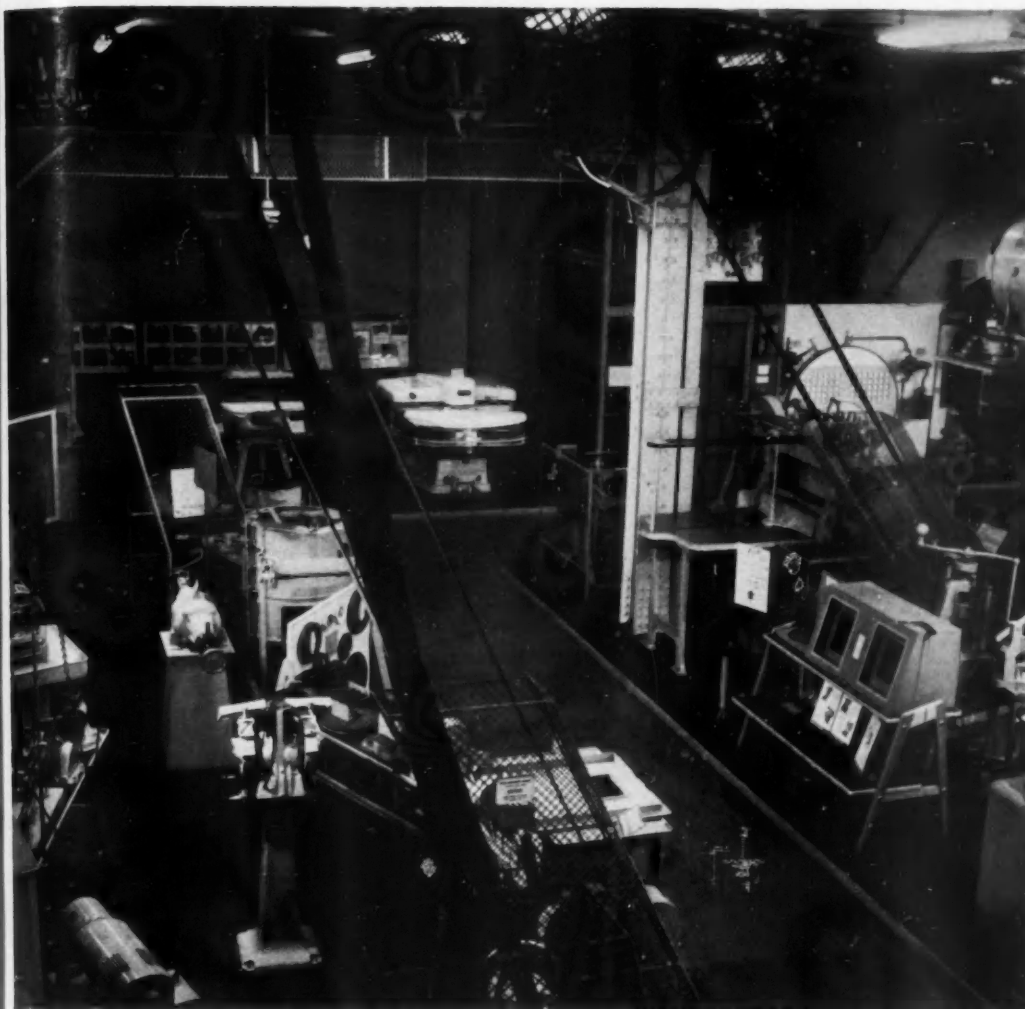
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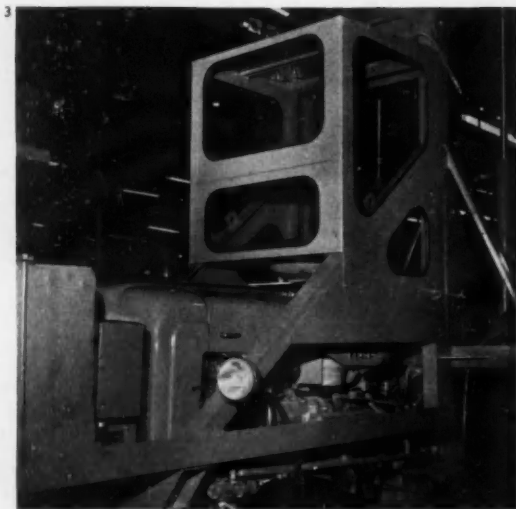
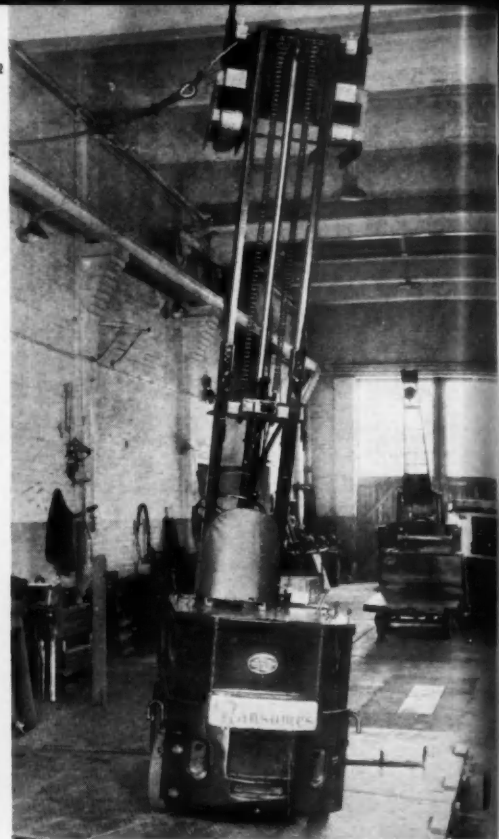
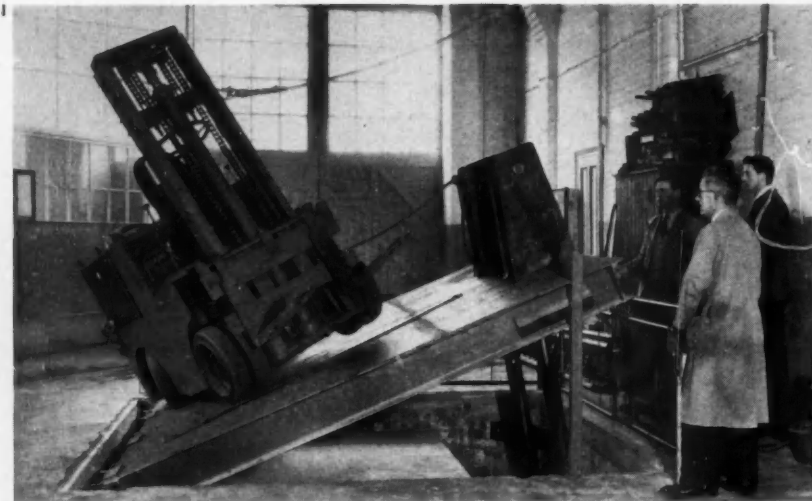


A view of part of the ground floor of the Ministry of Labour Industrial Health and Safety Centre, 97 Horseferry Rd, SW1. This illustration gives some indication of the comprehensiveness

but general lack of clarity in the displays. An exhibition such as this could be made very much more effective and informative by a proper consideration of layout and presentation.

Examples of posters for accident prevention, issued by the British Safety Council LEFT and RoSPA CENTRE AND RIGHT.





Sam Lambert





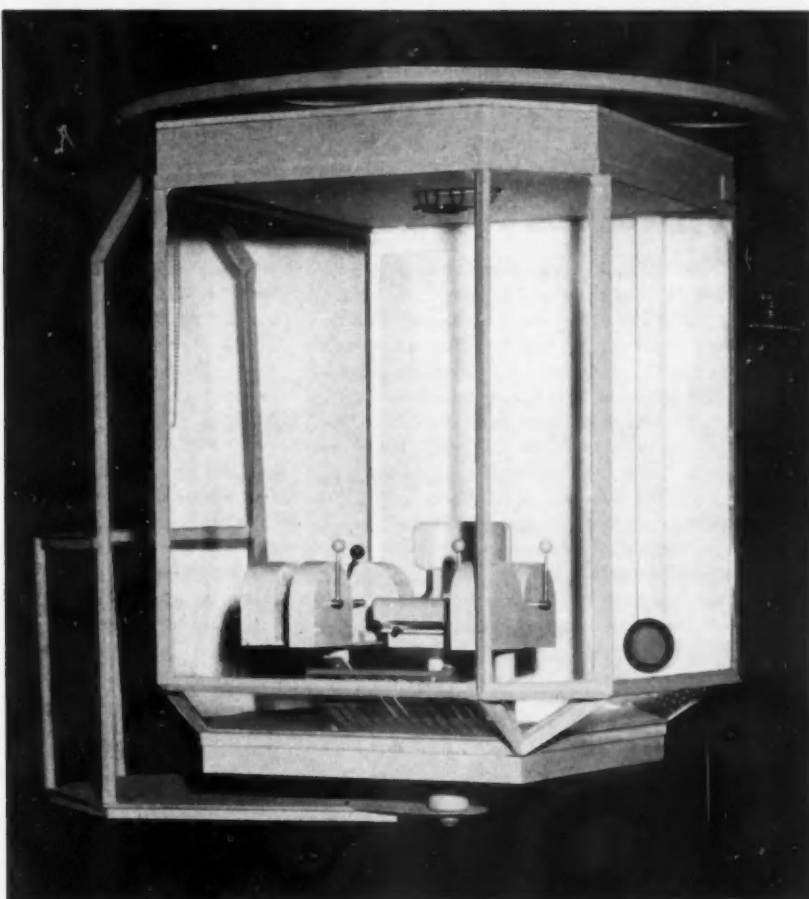
1 and 2 At the *Mechanical Handling Exhibition* there seemed to be only too few examples of really positive and thorough design and testing by equipment manufacturers to improve the safety of their products. However, at least one illustration of what can and should be done is given by the comprehensive dynamic tests on its fork-lift trucks by Ransomes, Sims & Jefferies Ltd, one of which is shown here undergoing tests for lateral stability.

3 and 4 The Neal *Pelican* loader demonstrates intelligent adaptation of existing tractor equipment to new use at a competitive price, except for the safety of the driver when mounting and dismounting; the mass of cranks and levers, which adapt the controls and yet allow rapid reversion to the normal tractor position of driving, are well designed, but the driver should never be asked to climb through and over them. The back of the cab, 3, could very easily be made into a light door which, with a suitable foot step and hand hold, would provide a much simpler, quicker and above all safer, way in and out.

5 The Massey-Ferguson fork-lift adaption extends the range of this versatile tractor still further and, provided only intermittent use is involved, it is probably sound enough. Fundamentally, however, and certainly for prolonged use, the operator has a less than perfect view of his task as he turns round in the seat, and fatigue and errors could well arise.

6 Failure to fit the equipment to the operator, even to the operator's basic physical dimensions, is a common fault; bad positioning of car pedals must have caused many accidents and near-misses. Although a pre-war design this car, the *Ford Popular*, is still produced (DESIGN July).

7 A good example of what can be done to match the operator's needs is this crane cab devised by the ergonomics department of the British Iron & Steel Research Association (DESIGN April 1957).





8 and 9 Bad safety devices are worse than useless because they are left off in annoyance by the operator, and the annoyance factor itself may make the operator accident prone. The pulley ratios of high speed drills have to be changed frequently; it is compulsory to enclose the transmission drives. This type of cover must have been left off by many operators because of the trouble it involves. When taking these photographs at the Industrial Health and Safety Centre, it was found that this machine was a new model, just received from the manufacturer, on which the old, heavy metal cover had been replaced by a glass fibre one, thus acknowledging the imperfection of the design without materially improving it. A hinged lid with simple fastener, and a microswitch (such as is fitted on refrigerators to light the lamp) to turn off the power, would make this cover easy and safe without significant extra cost in money; the cost is in the thought and effort of the designer.

In addition to the illustrations some very relevant accident reports emphasise the need for much more attention to safety by the designer. It is strong criticism of designers that the 1956 report on electrical accidents<sup>5</sup> should find the need to say of isolating switches: "Each position of the operating handle should be clearly labelled, and it should be

possible to see plainly not only what position the switch is in, but to what position it will move if the handle is operated in a certain way."

The bias in accident prevention towards safe usage rather than safe design influences also the assessment of causes in accident reports. "The compressed air tool had been turned upside down in order to insert a new spade cutter and this had just been fitted, but not locked in position, when it was ejected with considerable force and struck a man on the head.

"The operating trigger on this particular compressed air tool was fitted on top of the operating handle so that it would be depressed by the palm of the hand when the tool had to be operated. When, however, the whole tool was turned upside down pressure from the ground depressed the trigger and the tool commenced to operate. This type of accident could be avoided by the provision of a guard over the trigger but the *basic cause of the accident* (my italics) was incorrect use of the tool."<sup>6</sup> This analysis surely excuses the designer far too lightly. Misuse of such robust and heavy tools is inevitable and should be allowed for by the designer. Unguarded triggers are certain to result in an accident eventually.

<sup>5</sup> *Accidents at factories, docks, building operations and works of engineering construction*, Vol 35, HMSO, 1958, 11 3d.

<sup>6</sup> Form 929, HMSO, 1958, 28 6d.

continued from page 30

notes to those manufacturers who are offering obviously faulty designs. This would presumably diminish subsequent work by the inspectors at individual factories and, above all, would help actually to forestall some accidents.

The attitude of industry itself to safe design, as opposed to safe usage, does not seem very dynamic. At the *Mechanical Handling Exhibition*, in what is thought to have been a comprehensive search, only one fork-lift truck manufacturer was found to be giving rigorous safety tests during design and development, 1 and 2. It is understood that very few equipment manufacturers invite the inspectorate or the safety organisations to inspect new designs.

A further comment must be made on the chief inspector's report for 1956. Although the inferences drawn from the various accident figures are valuable, there is no analysis of accident incidence rate with respect to man-hours actually worked within each of the causation groups and equipment types. Only such an incidence rate can really pinpoint those occupations, environments or equipments which are truly more dangerous. This suggestion is made in full awareness of the difficulties involved, but it is one which ultimately will have to be tackled.

Organisational effort is also needed to develop proper courses during the training, at technical colleges and elsewhere, of engineering and industrial designers. At present training courses on safe design are not available either to students or to practising designers; RoSPA and the British Safety Council might well be the bodies to organise such work.

### Safe design: three basic principles

The first basic principle of safe design is to try to produce an equipment which is ergonomically so well adapted to the operator that he never makes a mistake. Success can only come from dynamic thinking, from imagining the machine on full load with the operator going through his whole work sequence: "Are the demands of the equipment on the operator well adapted to his natural shape, size, abilities and expectancies?"<sup>7</sup> In so far as a design does not fit the operator it increases the chances of error and therefore increases his accident risk.

## Postscript

During the research carried out for this article, a number of expert authorities was consulted, but it was not until the article was submitted to H M Chief Inspector of Factories for his comments, that a pamphlet on *Industrial Accident Prevention*<sup>8</sup> was brought to our notice. This is surprising because the report is an excellent and authoritative review of the problems involved and recommends itself "to the attention of all concerned with safety at work in all sections of industry".

<sup>8</sup> A report of the Industrial Safety Sub-Committee of the National Joint Advisory Council, published for the Ministry of Labour and National Service, H M S O, 1956, 18 6d.

The second basic principle is to ensure sound engineering. Bad design often springs from too little study of operating conditions; all the possible faults which could develop in the equipment with improper wear and tear (as well as fair wear and tear) should be analysed. Will it fail safe in all cases?

The third basic principle is to ensure that, if the operator does make a mistake or if the equipment does fail, the mistake or failure does not result in injury. This can only be achieved by preventing contact of any portion of the body with any potentially injurious hazard, either by redesigning to remove the hazard or by enclosing it with protective guards. Suitable guards and safety devices must be part of the basic design and not later additions. However, they must never in any way hinder the operator in the efficient or speedy doing of his job. There are many examples of perfectly safe but thoroughly obstructive guards being thrown away by operators, to their immediate financial gain but ultimate heavy personal cost; the designer and not the operator is really guilty when this happens, 9.

In a survey such as this there is no room to include the many other general and more detailed principles. An analysis of these has been made by RoSPA but so far it has been published for limited circulation only.

## Conclusions

The chief inspector of factories is clearly correct in his statement of the need for much greater attention to be paid to the problems of safe design. Much can be and waits to be done by the official safety organisations, by industry and by the factory inspectorate itself, in order to raise design for safety to the level of care already devoted to safe usage by the operator.

Ultimately, however, as with all basic design factors, the onus is upon each and every individual designer, by vigorous and painstaking work, to ensure that he has attempted to anticipate every mishap and has taken every possible precaution to achieve a safe as well as a serviceable and pleasing product.

<sup>7</sup> For further detailed advice refer to:

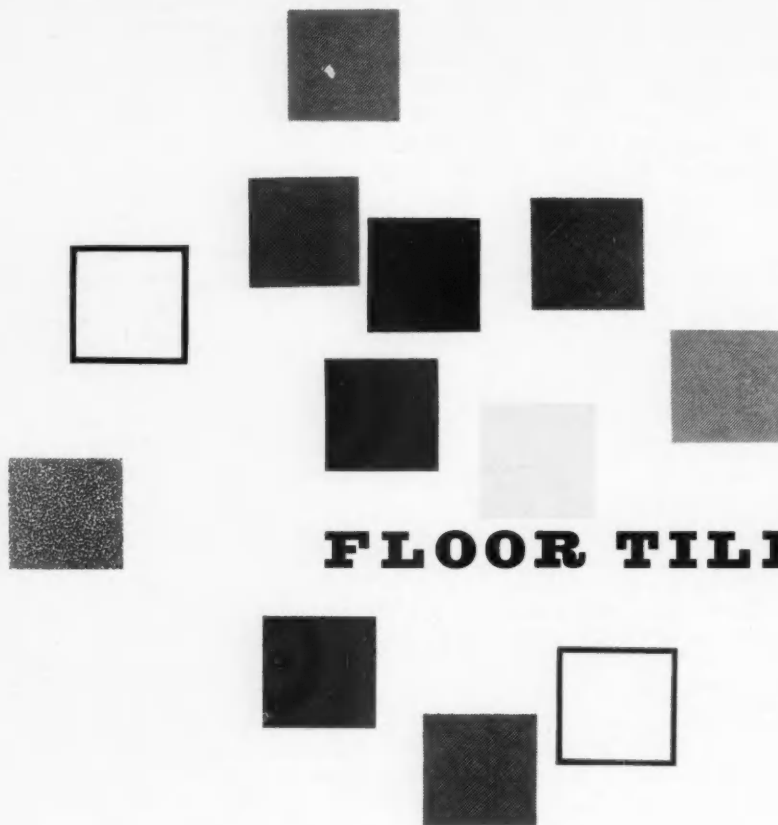
*Data on human performance for engineering designers*, K. F. H. Murrell, reprinted from *Engineering*, 3a.

*Human engineering guide for equipment designers*, W. E. Woodson, University of California Press, C U P £1 6s.

However, even this report, which emphasises the importance of design factors, still appears to reflect the tendency for the onus of responsibility for accident prevention to be put upon the user and hardly at all upon the designer. (Only two out of 133 paragraphs deal with safe design.)

One of the major recommendations of the report was that a standing national committee should be set up to keep this whole field under constant review. Two years after its publication this has not yet been done.

EDITOR



## FLOOR TILES

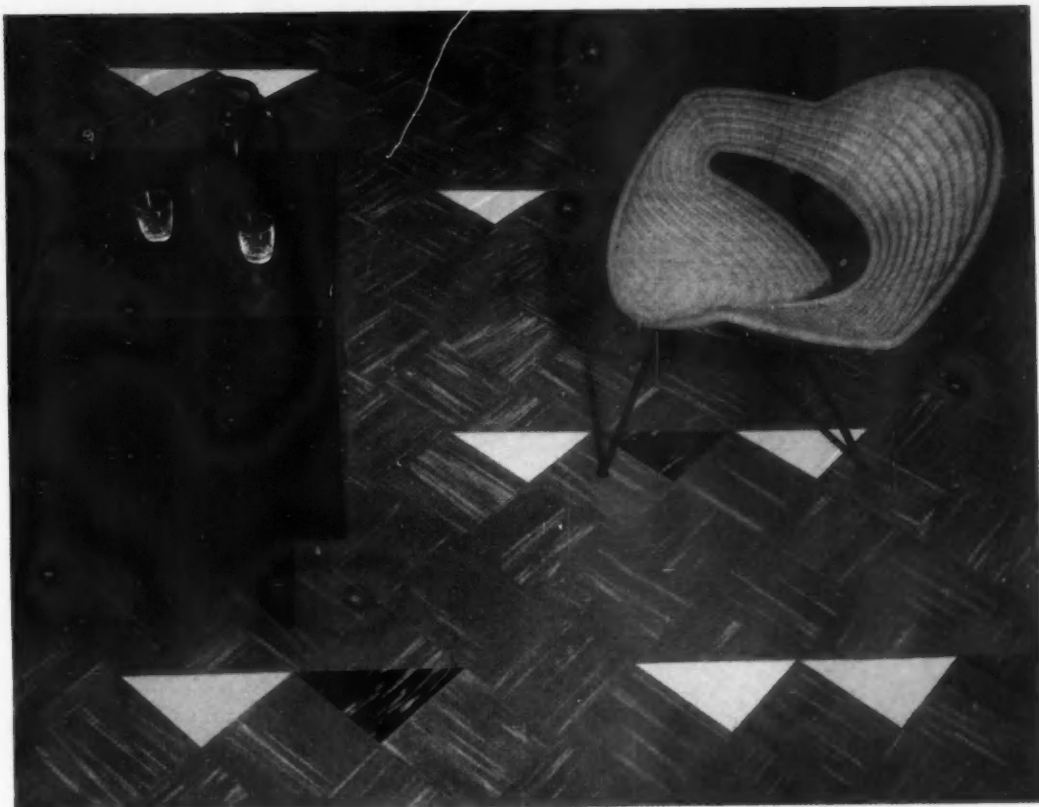
*This feature considers some leading ranges of thermoplastic and rubber tiles available in this country. The charts on pages 38 and 41 show the various types of tile, their properties and prices. The design possibilities of linoleum, the first man-made flooring to be developed industrially, were discussed in DESIGN for November 1957.*

DAN JOHNSTON *Industrial officer, CoID*

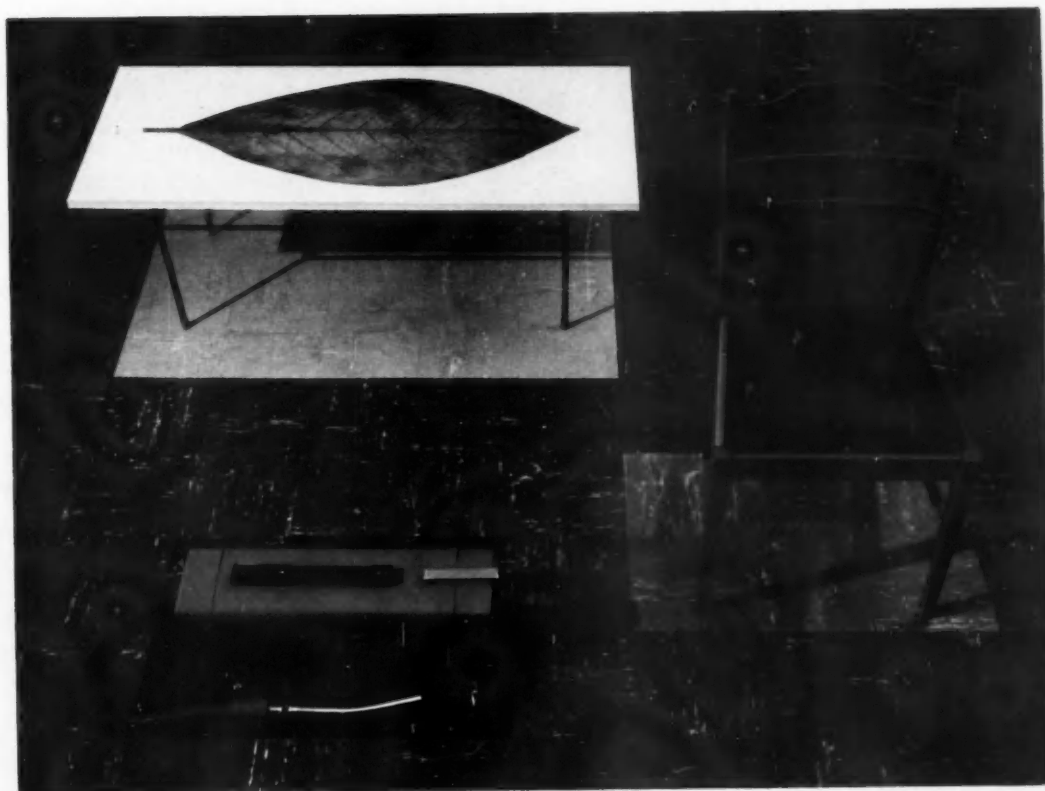
A WIDE RANGE of natural materials with pattern making possibilities is used for hard surface floor coverings. Wood blocks and strips, cork tiles, and marble and mosaic effects can still offer perhaps the most interesting and satisfactory floors for many purposes. Generally speaking, however, such floors are expensive, and over the years the tendency has been for man-made floorings of linoleum, rubber and thermoplastic tiles to grow in importance.

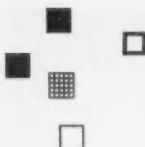
Thermoplastic tiles have been manufactured in great quantities in this country during the last decade. One of the main reasons for their success has been their ability, in suitable circumstances, to be laid on solid floors where there is no damp proof course. After the second World War, timber restrictions caused the building industry to change from the traditional practice of installing suspended wooden floors to building solid concrete floors. Until the introduction of the thermoplastic tile, there was no cheap decorative floor covering capable of behaving satisfactorily on that sort of base. The performance of this type of tile over the years has been so satisfactory that although

Tiles in a living area - a simple cut tile effect in *Accoflex*. Tiles in the semi-flexible ranges are suitable for all parts of the house. Because they are hard wearing, resist grease marks, and do not stain easily, they are widely used in kitchens and showrooms. MAKER *Armstrong Cork Co Ltd.* Approx 24s - 35s per sq yd laid.



Tiles in an exhibition setting - slabs of colour in *Marleyflex*. The clear, bright colour is typical of tiles in the semi-flexible ranges. These are practical and hard wearing, and the firm produces a variety of effects. MAKER *The Marley Tile Co Ltd.* Approx 24s - 35s per sq yd laid.





timber restrictions are no longer in force, solid floors and thermoplastic tiles are generally in demand as ever.

The production of thermoplastic tiles in Great Britain rests with three major firms and three or four smaller ones. The factories are well distributed over the whole country. It is estimated that some 20 per cent of the industry's output is exported and that total output is worth between £6-7 million a year.

Rubber flooring has a longer history in Britain than the thermoplastic tile. As a relatively expensive material with compensating special advantages in use, it has remained in constant demand, especially for public buildings. The estimated annual output of the industry is worth £900,000 a year, and about £275,000 worth is exported.

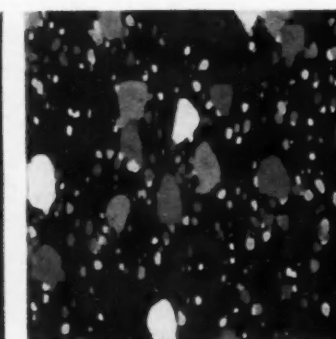
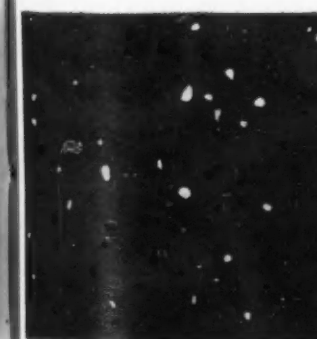
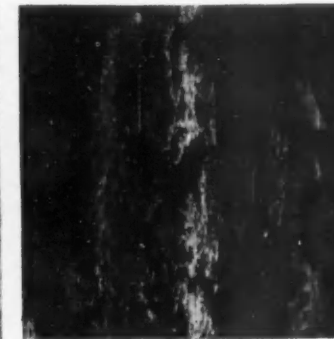
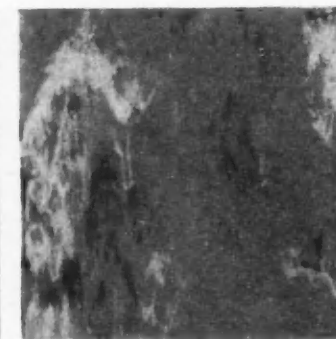
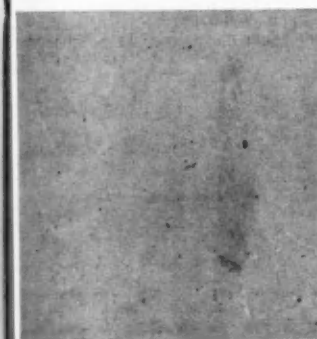
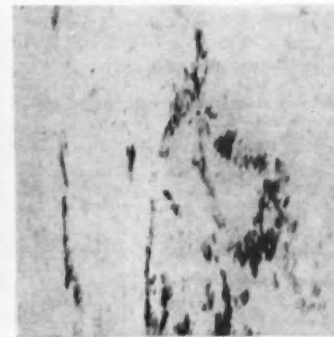
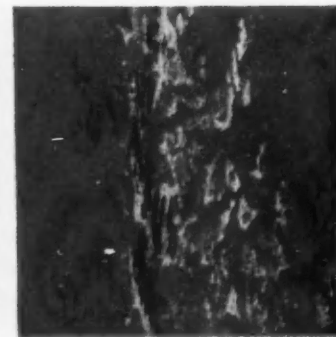
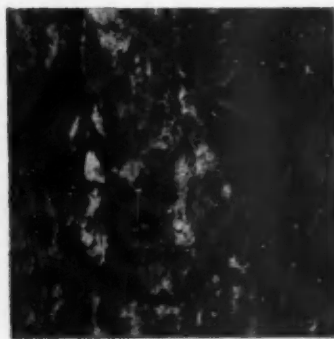
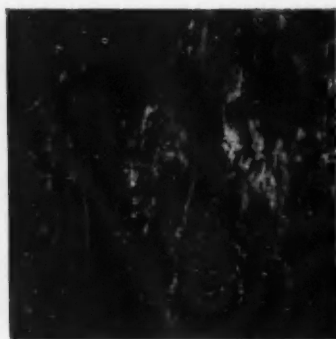
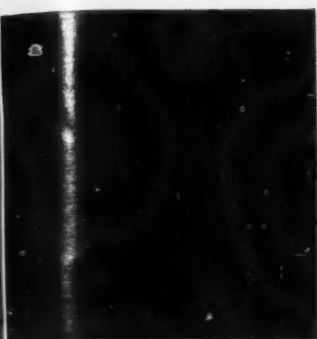
One characteristic common to both rubber and thermoplastic floorings is that the pattern of floors can be individually created. The tiles are offered either in plain colours, or with simple, partially controlled patterning, and interesting effects are

## Thermoplastic tiles

<i>Description</i>	<i>Trade names and makers</i>	<i>Price range according to gauge and area</i>	<i>Properties</i>
Asbestos with a filler, and pitch, bitumen, or resin as binder	<i>Marleytile</i> (The Marley Tile Co Ltd)  <i>Accotile</i> (Armstrong Cork Co Ltd)  <i>Semastix</i> (Semtex Ltd) and others	Approx 11s 6d - 30s 6d per sq yd laid	Used extensively in new housing estates. The great advantage of these tiles is that they can be laid directly on to dry solid concrete ground floors. The dark colours - browns and blacks are the cheaper. The lighter, more expensive colours are useful for pattern making; they are more resistant to staining and to indentation than the dark colours. Size: 9 inches square.
Semi-flexible: asbestos with PVC as binder	<i>Marleyflex</i> (The Marley Tile Co Ltd)  <i>Accoflex</i> (Armstrong Cork Co Ltd)  <i>Vinylex</i> (Semtex Ltd) and others	Approx 24s - 35s per sq yd laid	When laid on solid floors a damp proof course is sometimes recommended. Colours are brighter and clearer than in the first category. As the tiles are semi-flexible, they are more suitable for laying on wood or slightly uneven surfaces than those in the above category, as there is less risk of their cracking. For this reason the semi-flexible type of tile is usually chosen for Do-It-Yourself ranges. These tiles are hard wearing, resistant to grease and to staining. This makes them very suitable for use in kitchens and showrooms. Size: 9 inches square.
Vinyl: where PVC is the main constituent	<i>Marleyflor</i> <i>Marleyflex de luxe</i> (The Marley Tile Co Ltd)  <i>Semflex</i> (Semtex Ltd)  <i>Crestaline</i> (Jas Williamson & Sons Ltd) and others	Approx 29s - 60s per sq yd laid	When laid on solid floors, a damp proof course is recommended. Vinyl tiles provide an excellent range of clear, bright colours. They may be completely flexible, and they are very resistant to grease and chemicals. These tiles are extremely hard wearing, so that a relatively thin gauge will be adequate for heavy traffic. Sizes: 9 or 12 inches square; the material is also available in sheet form and may be hessian-backed.

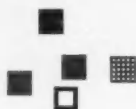
All hard surface floors except stone tend to be marked by rubber-soled shoes and by crushed cigarette ends. On PVC floors such marks are more difficult to remove, unless special cleaning materials are used.

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Some examples from the Marley ranges. 1-4 are in the cheapest range, *Marleytile* (approx 11s 6d - 30s 6d per sq yd laid), and of the colours shown, the brown and black cost less than the others.

*Marleyflex*, 5-10, and *Marley Homelay*, 11 and 12, are more expensive (approx 24s - 35s per sq yd laid) but both ranges give rich effects and colours. MAKER *The Marley Tile Co Ltd.*



**Tiles in the kitchen** - feature strip used with *Semflex* 12-inch tiles. This type of tile, in which PVC is the main constituent, is extremely hard wearing, and is produced in a wide range of excellent colours. MAKER *Semtex Ltd.* Approx 29s-40s per sq yd laid.



obtained by making the best use of colour in block patterns, by the employment of feature strip, or by cut tile effects.

The limitations and, at the same time, the considerable opportunities of such a conception of design are obvious. In a large area, such as the entrance hall to a public building, the pattern on the tiled floor may be the most interesting feature; in the small modern house with open planning, patterns will probably be more restrained: the natural subdivisions of the living area can be emphasised, or on the contrary, they may be linked together by colour and pattern. In the case of a tiled floor for a single room it may be that a simple block pattern in carefully related colours will be the most effective approach.

Manufacturers could perhaps consider two possibilities for future design developments. First, a wider range of neat patterns could be developed; the flecks, mottles and speckled effects available look suspiciously similar to the traditional jaspers, marbles and granites in linoleum. It can be argued that such effects are equally natural to the processes of manufacture of the new floor coverings as to the earlier linoleum. It is nevertheless, quite possible that other and equally characteristic patterning could be developed which would in no sense seem imitative of natural or man-made materials. Second, every effort should be made with floor tiles, as with inlaid linoleum, to look

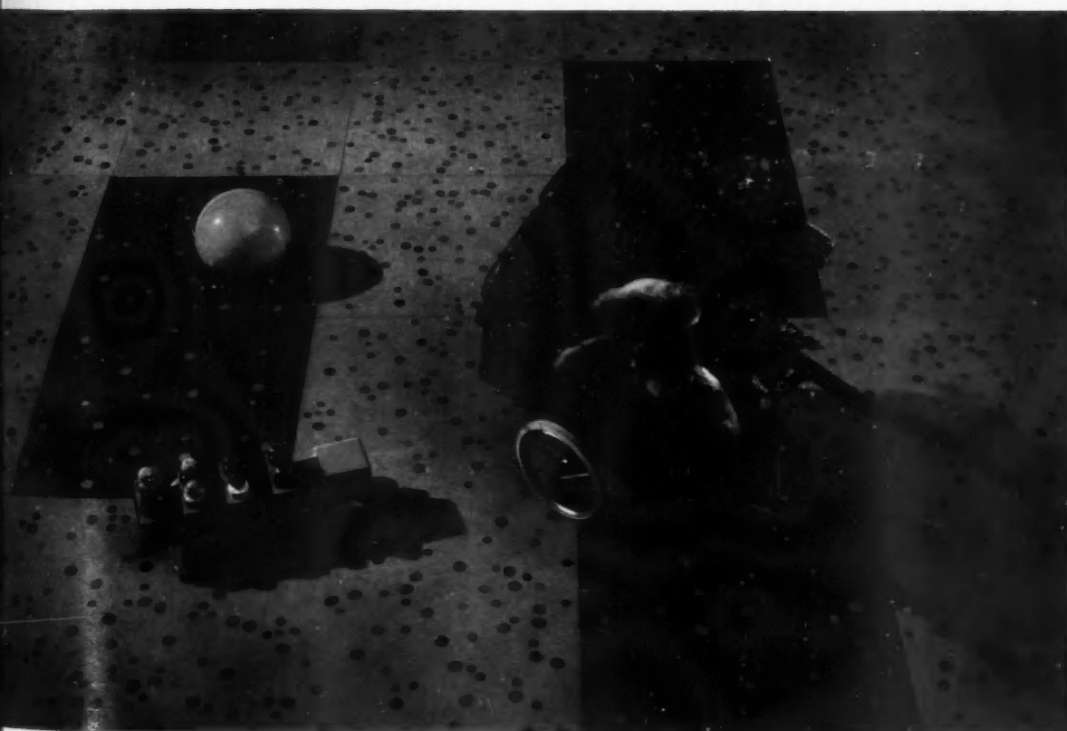
## Rubber floors

<i>Description</i>	<i>Makers</i>	<i>Price range according to gauge and area</i>	<i>Properties</i>
Natural rubber, with pigment colouring, vulcanised to the quality required	Morris Rubber Industries Ltd Semtex Ltd and others	Approx 34s-58s per sq yd laid	<p>If considered for laying on a solid floor, the floor should be properly damp-proofed.</p> <p>There are excellent colour ranges, the colour being more muted than in PVC materials. Rubber tiles are of course flexible, but mark badly with grease, and need careful maintenance. They are hard wearing, softer to the tread than other man-made floorings, and less noisy in use.</p> <p>The tiles may be of various sizes, and rubber is also available in sheet form.</p>

the straight-jacket of square and rectangular blocks. The restraint of conforming to the square grid of a chequer board is by no means a disadvantage, but an alternative would enlarge the scope of the designer with creative ideas. Feature strip in various widths has proved most useful. Cut tiles for more ambitious special inset patterns are also available, and some interesting work has been done on these lines.

The tile manufacturing process imposes clear limitations. These stem more from the difficult stock problem created by a multiplicity of styles, than from the processes of production. It would seem, however, that new developments are possible, and that design ability from outside the industry could well be used, not only in the composition of special pattern, but to create new basic shapes for tiles, which would form a welcome alternative to the standard 9-inch square.

**Rubber tiles for the kindergarten** - from the manufacturer's *Confetti* range. Rubber tiles are produced in excellent colour ranges; they are rather softer to the tread and therefore less noisy than other man-made floorings. **MAKER** Morris Rubber Industries Ltd. Approx 34s-58s per sq yd laid.

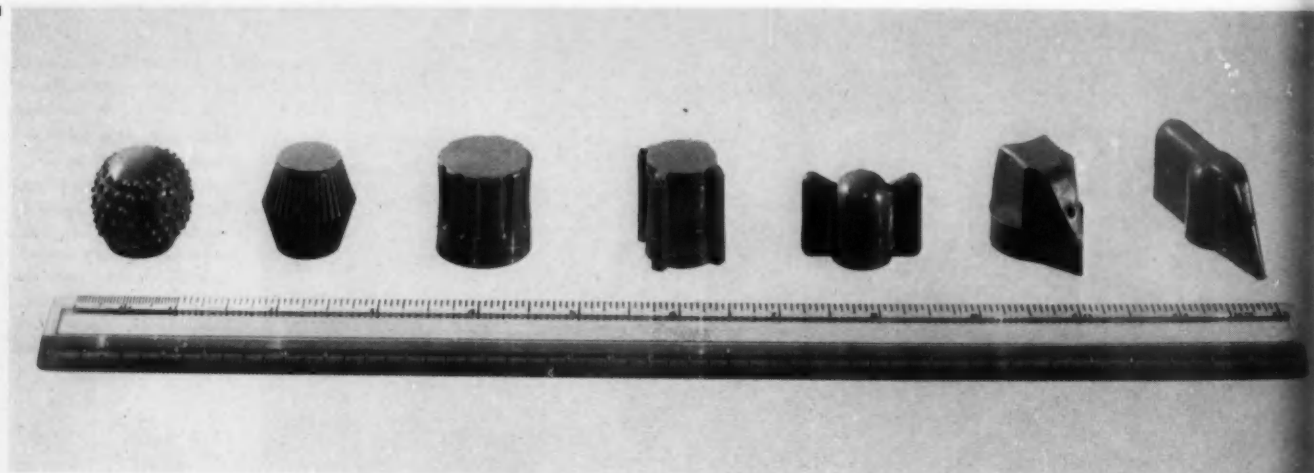


# Information and control

*Knobs are a means of passing information to a machine – switching it on or off, making continuous adjustments and selecting one state from a number of possible states. Dials are a means of feeding information about a machine's internal state back to its operator.*

*The principles of dial design, based on experiment, were enumerated in an article in DESIGN for February pages 31–35, which discussed the various visual factors affording easy transfer of information from dial to man and their integration into designs for specific situations. The present article follows this approach with an examination of the design of meter dials produced by several British firms.*

*Research has also been carried out on the design of knobs; one aspect, a study by the RAF on tactile recognition, is described briefly in this article. Although the range of knobs which resulted is specific to electronic equipment, the design principles for recognition by touch could usefully be applied in several other fields, for instance, the control of motor vehicles (DESIGN July pages 29–35).*



## knobs

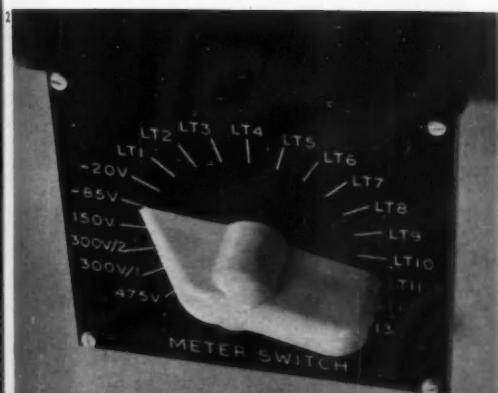
TWO EXPERIMENTS have been carried out by the RAF on a large number of aircrew and laboratory staff to determine a range of knobs easily distinguishable by touch which could be recommended for standardisation. The subjects were blindfolded and wore standard service aircrew gloves. In the first experiment,<sup>1</sup> a series of knobs of different sizes was compared for recognition by touch alone. In the second,<sup>2</sup> a set of

<sup>1</sup> Air Ministry, Flying Personnel Research Committee report FPRC 702, *Experimental knob shapes* by Whittingham, 1948.

<sup>2</sup> Air Ministry, Flying Personnel Research Committee report FPRC 702a, *Selection of knob shapes for radio and other controls* by Brennan and Morant, 1950.

knob shapes of different sizes was selected for particular functions as a result of the subject's expressed preferences. It was found in the first experiment that there was no difference between the four sizes of knobs (1½ inch, 1¼ inch, 1 inch and 0·6 inch) as far as accuracy of recognition was concerned. In the second experiment there was a decided preference for the 1-inch size; if there was to be any deviation from this then the slightly larger was preferable to the slightly smaller. The most general comments on the shapes of knobs from the subjects of the second experiment were (a) dislike of sharp corners and edges (cold fingers and

1 Knob shapes in grey polythene developed from the RAF studies on tactile differentiation and made by Whitely Electrical Radio Co Ltd. They are also available in black and any colour in the ICI range. As well as being easy to distinguish by touch this range of tactile knobs gives good visual cues to aid transfer of information to the operator. In 2, one of them is fitted to a voltmeter and set at -85v. Compare this with 3, in which the same instrument is fitted with another knob also set at -85v. In the latter the acute parallax is clearly visible and the black knob is lost in the dark tone of the instrument.



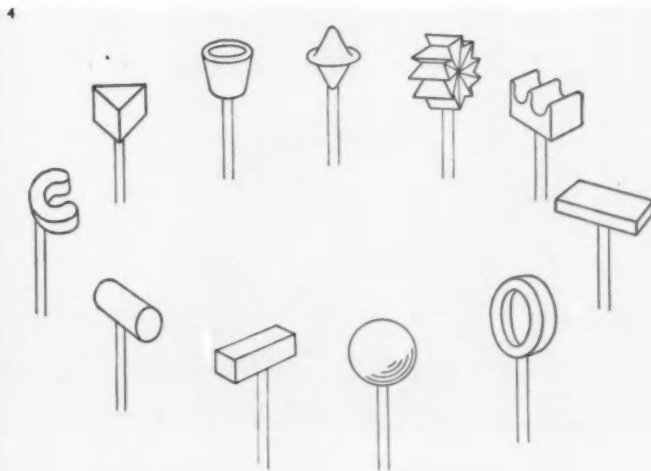
skinned knuckles were referred to); (b) preference for cylindrical forms for continuous adjustment; (c) danger of knobs projecting too far in case of accident - this conflicted with suggestions that knobs should be raised to aid recognition while wearing gloves.

This research has led to the development of a range of knobs, 1, suitable for different functions and which is uniquely differentiated by touch. The range includes cylindrical or spherical shapes for smooth, continuous adjustment, with coarse or fine texture which gives visual as well as tactile differentiation; cylindrical forms with projections to improve grip and manipulation for uncritical switching; and pointer shapes where directional indication is required with sufficient tail for ease of manipulation.

However, some improvements could still be made. The method of locking the knobs to their shafts - a screw through a hole in the shaft - needs improvement in mechanical detail; for instance the screw cannot be easily removed when taking the knob from the shaft. They would also be more effective if means were provided for fitting a mechanical stop. This is not an immediately obvious point but it is, in fact, most important. With the use of multi-way switches it is necessary to stock a large range of 2, 4, 6 or 12-way switches for service replacement. But a knob fitted with a mechanical stop would reduce this stock to one type of multi-way switch.

The finish of the knobs perhaps could be improved upon by trimming the flash produced by the joints in the mould, or by using a different material or process for their manufacture.

Nevertheless research and development has been done on this range of knobs and they represent an important advance.

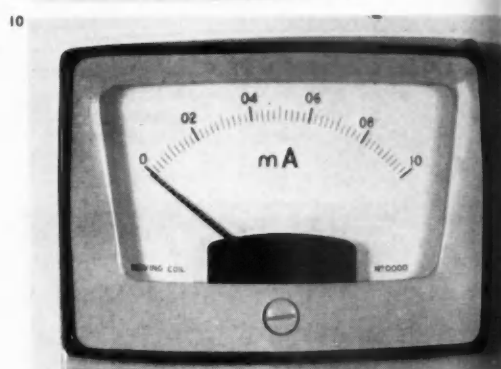
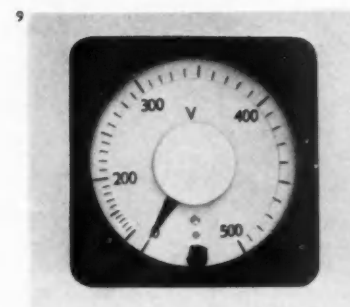
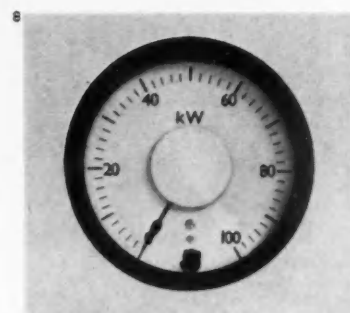
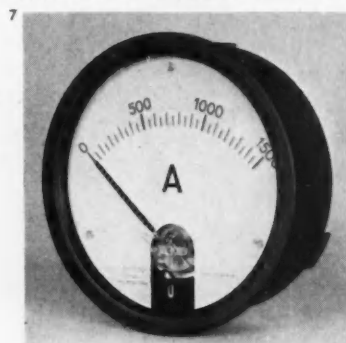
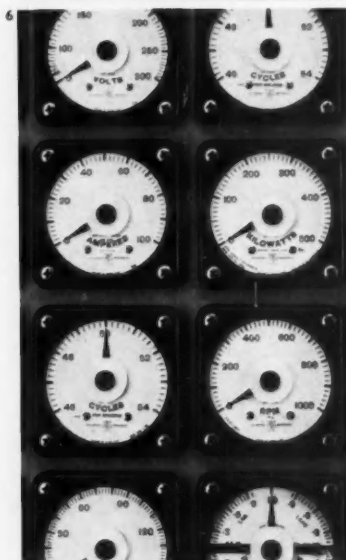
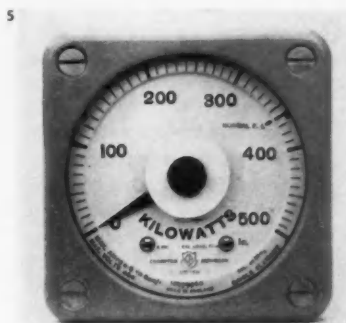


4 Eight of these 11 knobs resulted from a study (similar to the RAF's) on tactile differentiation carried out in 1947 by the US Air Force; the other three come from a similar study carried out by the US Navy. In the Air Force study, 22 knobs, which visually seemed to be sufficiently differentiated to make confusion between any of them impossible, were tested and it was found that only eight could be safely differentiated by touch alone.

*continued*

for particular preferences. There was no inch, 1 1/4 inch. Recognition was was a decided was to be any is preferable to uments on the and experiment old fingers and

## Information and control



5 Wattmeter. MAKER Crompton Parkinson Ltd.

6 Group of meters. MAKER Crompton Parkinson Ltd.

7 Ammeter. MAKER English Electric Ltd.

8 Wattmeter. MAKER Metropolitan Vickers Electrical Co Ltd.

9 Voltmeter. MAKER Metropolitan Vickers Electrical Co Ltd.

10 Model for ammeter. DESIGNER Peter Bell. MAKER Elliott Brothers (London) Ltd.

11 Edgewise micro-ammeter. MAKER Elliott Brothers (London) Ltd.

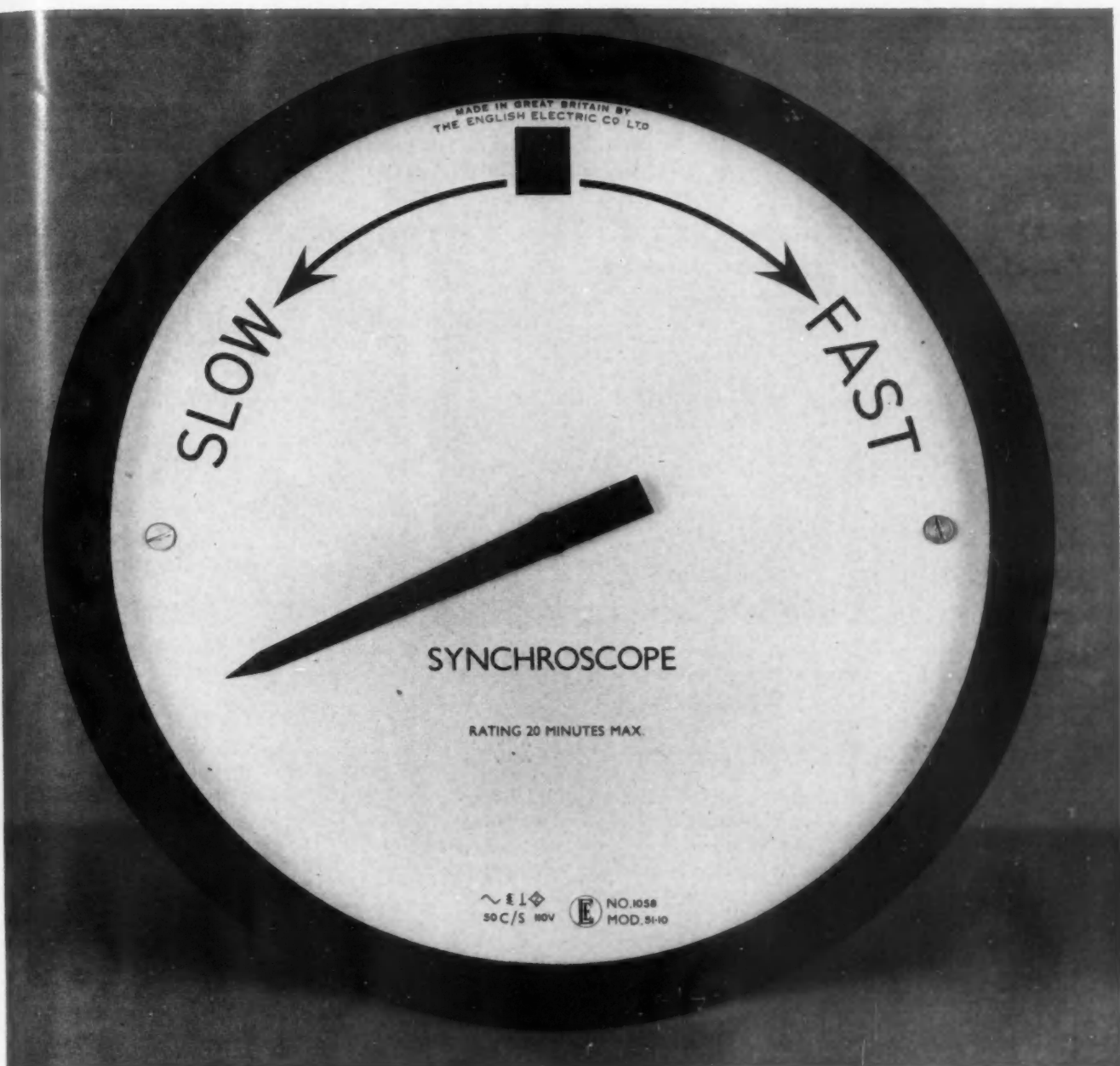
12 Rotary synchroscope. MAKER English Electric Co Ltd.

## meters

The general principles of dial design obtain whatever the function of individual dials might be. However, in certain circumstances, for instance meters for use with electronic equipment where great accuracy in reading is nearly always essential, these principles must be applied with particular care.

Some manufacturers appear to be utilising the material which has been made available by research, and are producing meters with simple, clear scales and bold pointers. Almost all the meters reproduced are in this class but some are marred by lack of proper attention to detail. For

instance in 5 the centre pivot is in the form of a black blob which can be distracting when the dials are grouped in a bank, 6. In 8 and 9, the pivot is covered by a rather too large white disc; it is surprising that this firm, which is clearly attempting a simplified styling, should retain a special-headed pointer on an otherwise clean design, 8. From the points of view of scale and pointer the best design shown here is 12, which, although a special case and different function from a normal meter, is an example of how well a dial can be designed. The pointer is ideal in contrast, size and in the amount by which the counter-balancing

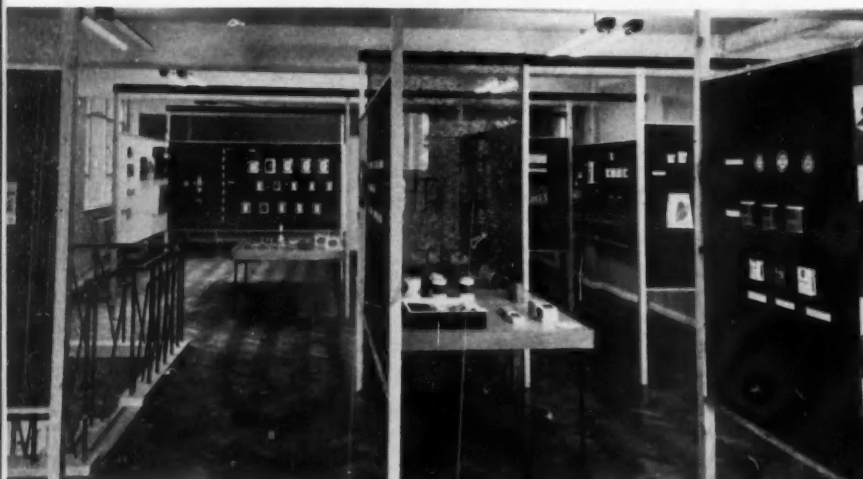


extends beyond the pivot. In spite of this, the firm appears, on the evidence of its pamphlets, to favour an 'open' case showing the mechanism of the pivot mounting which can be distracting, 7. Meters need not necessarily be mounted in round or square bezels; 10 shows the introduction of an element of styling without contravening the principles of dial design, although the numbering could be improved in detail.

One trend in meter design which tends to be contrary to the findings of experiment is for curved, horizontal or edge-wise instruments, 11. These meters have become standard

for use in process control panels where space may be at a premium. However, on many control process panels considerable areas of space separate the dials, making it just as convenient to use the conventional circular or square-mounted instruments. The curved glass creates awkward reflections, which together with fine pointers make reading difficult. The only valid situation for their use is when a number of them are arranged vertically with all the pointers making a vertical straight line when the quantities being controlled are at their correct working value, in which case any deviation would be quickly seen by the operator.

# At the centre of packaging?



Contrasts under one roof: the art gallery spaciousness of the Society of Industrial Artists' recent packaging exhibition, LEFT,



and the market stall busy-ness of typical exhibitors' stands in the Packaging Centre itself, RIGHT.

ALEC DAVIS

WHAT IS A PACKAGING CENTRE? It would be hard to find a centre, geometrically speaking, for such a large and irregular area as is implied by the word 'packaging' – an area which includes in one corner the crating of jet fighters for export, in another the design of labels for scent bottles, and in another the making of automatic machinery for food packaging.

The Packaging Centre which recently opened in London (as briefly noted in *DESIGN* for August) attempts to map this difficult territory, with some success. The degree of success, in the visitor's eyes, will depend on what he expects to find. If he is looking for a packaging design centre, he will be disappointed; if for the three dimensional equivalent of a well edited, tidy reference book of packaging materials and methods, he will not be wholly satisfied. But if he expects the Packaging Centre to reflect the packaging industries as they are today, he will have no cause to complain.

The packaging industries are in fact an assorted bunch, differing as much in the customer industries they serve as in the methods and materials involved. It might have helped to give the various pieces the appearance of at least belonging to the same jigsaw if they – that is, the firms' stands in the Packaging Centre – had had just one visual feature in common. But they go all the way from solid walnut and plate glass to contemporary-room-divider style: neither in lettering nor in colour schemes nor in sizes and styles is there any link between one stand and its neighbours.

But these are early days in the centre's history, and

its director, Philip Andrew, is fully conscious of the variety of design standards among exhibitors. It was necessary, first, to bring in sufficient exhibitors to make the centre a worth-while venture, and co-ordination was in the circumstances dismissed as impracticable. But Mr Andrew has hopes for the future; he believes that already some exhibitors have realised how far others have left them behind – and are doing something to reduce the gap.

Already the steady flow of visitors suggests that the centre is serving its purpose as a source of information; perhaps soon the information will be visually better presented; there is certainly scope for this.

The lack of co-ordination in the exhibitors' stands was made more evident, in its opening weeks, by contrast with the orderliness of a special display put on, at the centre's invitation, by the packaging group of the Society of Industrial Artists. Here, the plain black and white backgrounds could have been criticised as over-austere, but in fact they succeeded in their purpose of displaying, and displaying to advantage, some package designs worthy of the prominence thus given to them.

**On facing page** Recent package designs by SIA members: for Mentor pyjamas and shirts by Peter Ray, English Electric food mixers by Sheila Stratton, Finmar by Hans Schlegel, Tricorne by Robin Day, Gay paints by David Caplan, Foster's gin by Ronald Ingles, Keynote girdle and stockings by George Collett & John Reid, Saint Julien (Gilbeys) by Milner Gray, Fortnum and Mason by Ruth Gill.



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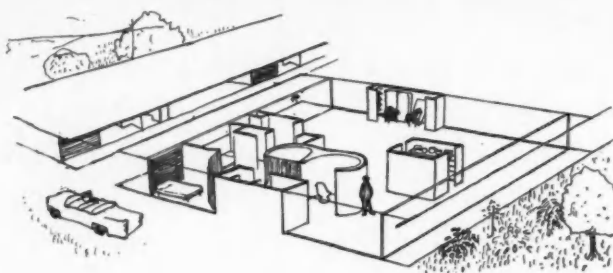
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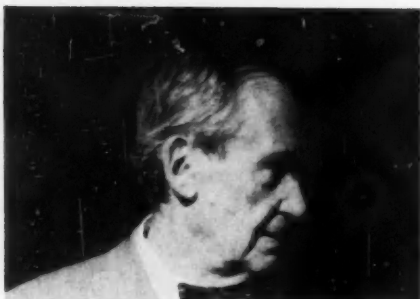
# The appliance house



*In DESIGN for May the article 'The appliance house' by Alison and Peter Smithson discussed possible changes that the advancing technology of domestic appliances could make to the design, planning and operation of the home. This was discussed in terms of two appliance house projects by the authors, which demonstrated an alternative system of prefabrication to the accepted one based on modular components. The appliance house was conceived more as a topic for discussion than as a complete and final design. Two comments on the house appear below; the first by Walter Gropius, a pioneer in the field of modular prefabrication; the second a symposium of architects, including Mr Smithson, and representatives of the British domestic appliance industry.*

## The implications of prefabrication: a comment by Walter Gropius

Sam Lambert



IN THEIR ARTICLE *The appliance house* (DESIGN May pages 43-47) Alison and Peter Smithson have shown an interesting new approach to prefabrication which is a challenging contribution to this problem from various points of view. The starting point of their arguments is that, "the flexibility offered by the 'stockyard-of-standard-parts' has a great intellectual appeal . . . but leaves some doubt as to whether the sort of flexibility they offer is worth having." They suggest that, "a more satisfactory solution might be to increase the size of the standardised units to at least the size of the whole house or school" and ". . . to produce expendable whole buildings (which implies the maximum production without variation of units, designed to perform a limited role)."

I appreciate highly the authors' demand for a redistribution of functions over the whole house by acknowledging the implications of advanced

technology in the wider cultural sense, but I have some reservations as to the advisability of this approach, as evident from the published drawings.

Even the smallest house is too large in its exterior structure to be transported over existing highways in one piece; the body must be subdivided, unless large helicopters can be developed in the future to transport it by air.

Furthermore, prefabrication of whole house bodies would also result in undesirable regimentation. For only when manufactured in great quantities - this is a serious economical handicap - can they be made cheap enough. Consequently only a very limited number of types could be offered, resulting in too rigid a limitation of house plans. Genuinely different individual requirements of families (size, profession, hobbies, predilection for different design) can be satisfied only by the greatest possible flexibility of not only the house appliances, but also the living spaces themselves. Assuming that in a democracy we want to encourage development of individual characteristics rather than promote the 'organisation man' levelled into insignificance, we must strive to find systems of house building which will offer the greatest possible variety of plans and appearances, and the use of identical machine-made parts for economy's sake. The cultural goal is to achieve *unity in diversity*.

Therefore, I believe that the manufacture of ingeniously conceived house components to be assembled on the site into dwellings of various

sizes and appearances still represents the best answer to the important problem of high flexibility. Agreement on dimensional co-ordination for these components would make it possible for industry to compete with products which are alike in fit, but which would look different, thus, leaving the choice to architects or clients according to their taste. This evolutionary process is already a fact. Dimensional co-ordination is spreading fast, and one component part after another has been taken out of the hands of the craftsman and is being industrially manufactured on the competing free market. This is evident from Sweet's catalogue in the USA, and similar catalogues of building parts in other countries.

### grid system

I agree with the authors that this whole process towards prefabrication is much too conservative, because old clichés of former living habits are used as models for the building industry instead of boldly conceiving new answers to our changed way of life. Here I fully endorse the demands for a necessary redistribution of functions and use of appliances. However, this approach is not necessarily tied to the conception of a fixed house body as suggested and could, in my opinion, be even better applied in a grid system of construction which lends itself to building spaces of different sizes, appearances, and compositions from identical components. Here I still see a promise of a

universally satisfactory method of building an infinite variety of combinations from the same industrially multiplied parts, without continuously repeating identical plans against which people will instinctively rebel.

May I add some thoughts on suitable plans for family units? The natural changes in one and the same family over the years are a formidable challenge for the architects to conceive flexible plans. A young couple may start out childless in a home, then children are born, grow into adolescence, and, when they leave the house as adults, the old couple remains. All the many requirements of the changing age groups have to be fulfilled by the same plan which is hardly feasible when it remains rigidly fixed. The best solution might be to create universal house space which can be partitioned off in different ways according to the respective status of the family; the connecting points for appliances, of course, remaining permanently fixed. Again a grid system can offer flexibility and satisfy basic functional demands for spaces serving gregarious purposes as well as for individual privacy and protection against noise. That calls for an arrangement which would, for instance, make bedrooms accessible without passing through the main living room.

The formal concept of living spaces may vary with designers. I, for one, am a geometric animal and would not like to live in womb-like caves, but that may be only a personal preference.

The fact that prefabrication has not yet come

of age in its true industrial meaning, although we have tested it in practice and have argued about it for almost 50 years, is more the result of economic causes than technical ones. Prefabricators have not yet beaten the old builder by lower prices. Their handicap is that a large scale turn-over which would enable them to lower the prices depends on a mass market, but a mass market can be reached only by offering low prices. To break this vicious circle is a formidable economic task. Old barriers have to be eliminated. For instance, the financing of dwellings is still geared to the old type of building methods, the payments being stretched over a period of from six to twelve months. If a substantial part of a house body is manufactured in 24 hours or less and has to be disposed of immediately in order to avoid the overstocking of storage spaces, financing methods have to be speeded up accordingly. The lack of co-ordination with faster housing finance methods has stopped various large scale attempts at prefabrication in the recent past.

Prefabrication has so many implications – social, aesthetic, technical, and economic – that to reach a solution the emphasis must be on closely co-ordinated teamwork between the architect, the engineer, the manufacturer, the real estate agent, the financing agencies and the legislator. The comprehensive collaborative approach has been used as in the case of the prefabricated school buildings in Hertfordshire which indicate the direction we should take.



## The implications of appliances: a symposium

### Taking part were:

Michael Farr, editor, *DESIGN*, chairman  
Peter Smithson, architect, with Alison Smithson, of the appliance house  
William Allen, architect, Building Research Station  
Eric Lyons, architect in private practice  
George A. Bilsland, an assistant manager, domestic equipment department of The General Electric Company Ltd  
Geoffrey Worssam, general sales manager of Frigidaire

*Smithson* The starting point of this study was twofold. First, it seemed to us that there had been a lot of talk about prefabricating houses, but nobody had thought what difference to a house appliances were making. The second interest was purely architectural. The houses being put up at present, on the whole, seem obsolete; that is, they no longer represent an acceptable social ideal. We felt that the most important thing for the architect is to present a new concept of the house; a new image with symbolic value which is both technological and cosy. Appliances have accepted symbolic values and I submit that they are both technological and cosy.

We already have houses which make provision for appliances, and as we said in the article, they tend to prop up an existing way of life. Not only that, they prop it up to such an extent that there is often no house left. The technique adopted in the design of the appliance houses was intended somehow to bring appliances under control.

*Worssam* I think we would all agree that the purpose of appliances in the home is, fundamentally, labour saving. They will perform a necessary function with the least amount of work on the part of the operator and so make more time for leisure. However, the majority of people

## The appliance house

Photographs by Harriet Crowder



Peter Smithson

will want to be free of appliances and not have them round their necks all the time when they are not in use. People who like cooking might spend a good deal of time at the cooker, so they would want something which is nice to look at, convenient to use – decorative as well as functional – and in a pleasant setting. I think Smithson said we already have houses which make provision for appliances, but I am afraid I disagree with that quite strongly. There is *no* room for today's appliances in today's houses. I would like to see a lot more room left for the housewife so that she does have space in which to put things which will save her time, give her more leisure and make life more pleasant.

*Lyons* I do not see that the advent of these appliances is really a fundamental change in the way of life. I think a house grows from more important aspects than the instruments which are inside it. The definition of the different parts of a house, sleeping parts and the daytime parts – the separation of the kitchen and the bath and the toilet and so on – all those things are absolutely fundamental. All we have managed to achieve is the possibility of making the chores in the kitchen more tolerable. And that is, I think, an advance. Basically most kitchens consist of storage, and the storage element in the house is terribly important; that is the constant in the kitchen, not the appliances which occupy a relatively small area. There are fundamental things. Storage is something no-one is going to revolutionise; you will have flat shelves, not curved ones and so on. The storage element is a very large part of the kitchen or even the house, for that matter, whereas the appliances we are talking about are for cooking or washing – that is all they are.

Unless one recognises that a house is a complex pattern and not just somewhere to put machines, I think we are missing a great deal. I have had a go at planning a flat unit exploiting the advantages of free space. I have practically given up because I could not solve the noise problem. I do not think you can put a kitchen or a bathroom in the middle of a living space; nor do I think you can have bedrooms separated by curtains.

*Smithson* Most houses today are terribly under-storage-spaced, and having more space to move in

is partly wrapped up with storage. You must be able to put furniture away when you do not want it and your life should not be cluttered up with appliances you do not happen to be using at the moment.

*Farr* Bilsland, do you, in the appliance industry, feel that there is a certain clutter occurring which is preventing sales of future new appliances?

*Bilsland* I look at it from the business man's point of view. I am in business to make money and if I could fill the houses with twice as many appliances as they have at the present moment I should be a lot happier. All I ask of the architects is to give us some room to put them there.

### need for retreat

*Allen* My first reaction to the Smithsons' designs was that I thought that they were conceived like the motor car and would be repeated *ad nauseam*, but I think I was misled, because when I came to think over the implications of appliances I did see quite a number of things I agree with. When Smithson speaks of appliances as props for the house it seems to me he is thinking of something much bigger – a complex of appliances – a kind of bathroom unit. And there seem to me to be big appliances and little appliances for which different orders of flexibility would be required. I do think that the kitchen does want breaking up into appliances and linking much more closely with the living space. I would also stress the need for retreat; having lived in my own open plan for 10 years now, I know where the needs for retreat are. I think it is in the nature of a complex of living spaces, substantially appliance-free, that is free of highly mechanised parts such as kitchens and bathrooms, where one needs this sense of retreat.

*Smithson* The intention in this plan was to free the living space of appliances by concentrating them. Then you would select appliances to be brought into the living space such as the television, the mobile cooker and so on. They would need to be well designed because they would become a sort of social focus. This way you get an uncluttered

living space from which you can remove the mobile appliances and concentrate the fixed appliances out of sight so that you do not get this warring of technology and styling. The concept of having a mass of unrelated objects all with a different style round you seems to me ultimately to destroy the spaces, and the architect's one concern is to keep the spaces not exactly free, but controlled.

*Farr* Let us move on to the next point, which is the question of the prefabrication of this house; its validity as opposed to normal systems of modular components.

*Allen* I do not see quite how it can offer a basic economy, and economy would enter into it very largely, because a great risk enters into its marketing. Look, for instance, how the sales of big American car companies have fluctuated between one another in the last two or three years. They now are reaching a point when no cars are bad – no cars are technically bad in America – and a modest change of styling alters the balance between, say, General Motors' making a profit and Chrysler making a profit. It seems to me that the marketing problems for whole houses in this way would be rather precarious and might affect the economy very considerably, whereas the modular component approach does not involve the same element of risk.

*Smithson* There are two angles on building technique important here. The first is the possibility of making plans for a unit house, and selling it more or less in the way that Span makes a unit and sells it. The other technology used in this house is what you might call a streamlined peasant technology. That is, there is *no* prefabrication as such, except that one simply uses automation machines for special extrusions, etc, on the assumption that one of the advantages of automation will be small runs of products. This would mean that you could design *more* specifically for a need, rather than in the old-fashioned architectural way. And the houses would fit exactly the functions required and the cultural climate.

*Bilsland* We have had some experience in the



Geoffrey Worssam

William Allen



Eric Lyons

appliance industry of the necessity of producing the maximum number of appliances – refrigerators, sink units, cookers and storage spaces – in the shortest possible time at the lowest possible cost. Immediately after the war my company and a number of others co-operated together on a modular construction basis, and it was in fact a profitable proposition.

**Lyons** But what value has a modular standard when you cannot put two appliances together? I tried some years ago when 'built-in' was the rage, but discovered you could not in fact build anything in, because we'd put two of your rounded articles together, and there was a gap in between. The modular routine is played out and I think that the free appliance is the proper approach.

## one at a time

**Worssam** I think that one of the reasons that the appliance industry works the way it does is the need for it to get volume. To tool up for one model of a refrigerator will probably cost £100,000. To get that money back you have got to make a lot of refrigerators. Most people buy just one refrigerator at a time – not a complete kitchen layout nor even a unit-cupboard with a refrigerator in it. And at a later stage they will buy a cooker. Perhaps they want a free-standing refrigerator with a work table top and not one which will go under an existing counter.

**Farr** Lyons, does that meet your point about the differences in sizes and the difficulty of making equipment fit together?

**Lyons** Yes. I was putting across the architect's particular problem in trying to design kitchens for a multitude of different people, all buying different appliances. The attempt at standardisation has been quite useless. It has misled everybody, and it is much better to come clean about this and regard appliances as self-contained little pieces of movable furniture.

**Smithson** That was the start of this argument. Appliances have symbol value first; second, they have to have a long run, and therefore they should

be allowed to develop in themselves, without being tied to an *a priori* dimensional system which may not be very useful.

**Lyons** Do I take it, Smithson, that you think this would provide an adequate solution?

**Smithson** Obviously this is not meant to be a universal solution, no house is ever that. The amount of houses that can be built in one generation is, say, five per cent of the total number of houses existing. Therefore even if you get five per cent appliance houses or Span houses, or whatever, there will still be the 95 per cent offering the other variations which people require to fulfil their way of life. There is a possibility that there is a group for whom this sort of house is suitable and we think it offers to this group a better sort of framework than is offered by any existing house. I imagine that if such a thing were made, a group would come into existence, in the same way that the Span houses have fitted into the class structure very neatly. A particular sort of person takes a Span house. Nobody knew the class existed before, but now it has been created.

**Farr** The next point we should deal with is who will take the initiative on this house. Should it be the appliance manufacturer or should it come from the architects?

**Bilsland** When you ask who should take the initiative, either the architect or the appliance manufacturer, I am sorry, but I think you are way off the beat. One person takes the initiative, and that is the woman – the customer.

**Lyons** Oh, come, people's needs are so easily satisfied. One of the most baffling things facing the architect is the apathy of the mass of the people and the ease with which they are duped by appliance manufacturers and others. The real trouble is that people will go on buying the bad spec builder's house because it suits them. As long as the kitchen is full of cupboards and looks packed, it is fine for most people; and if the kitchen is small enough it will work without any science. So in fact you must not blame the long-suffering anonymous woman who is really com-

pletely inarticulate and a victim of the pressure from commerce all the time.

**Worssam** I would like to put a point for the appliance manufacturer. He has now roughly 13 million wired homes in the country which are his prospects and we are building something like 300,000 houses per annum. The manufacturer is trying to sell to the 13 millions as well as to the 300,000; obviously the 13 million will call the tune to a greater extent than the 300,000. That doesn't mean to say that we do not want to work for both, but it makes it impossible to work entirely to the architect's ideal conception.

## wandering cookers

**Bilsland** It was asked earlier whether we as an industry would like to take the initiative in this project; I think that we would because the manufacturing problems of long runs bring into focus all sorts of technical difficulties such as the connections. Somebody mentioned a mobile cooker a moment ago and I was horrified. The thought of a cooker as we conceive it today wandering about the place just fills me with horror as an electrical engineer. The point is this, would we like to feel as manufacturers and engineers that we would have some control over those sort of things, where they are put, how they are connected, how they are protected and so forth? Therefore we would like to take the initiative, but certainly relying on the architect to give us guidance on the question of size and position.

**Allen** There are three cases which confront the manufacturer of a cooker today, but unfortunately I do not think the cooker industry has bothered to solve two of them. They have provided a cooker for the 13 million people who are buying replacements from time to time for kitchens which existed a long time ago; they have not provided us generally speaking with a proper built-in cooker. If they had hit that in 1948, it would have been about dead right, and we would not have been screaming for it ever since. The alternative is that we want to do easily what every housewife has to do, that is pull the cooker out to clean it, but you cannot do that now because it is a great big

## The appliance house



George A. Bilsland

straggling thing which if you are not careful will fall over on top of you. If it were mobile, it would be one stage towards the thing being freed.

**Smithson** On the other hand there are methods to separate the cooker into parts as they do in America. The oven is built into the wall, and all that is left is the fascia and the inside, which have to be cleaned. It was asked earlier whether the appliance manufacturers were prepared to intervene in the building industry; that is, to build a house to fit the appliances. I would be interested to know whether a manufacturer would be prepared to launch out into bigger units.

**Worssam** I can speak quite definitely for our company that we would not, because as it happens we only make two appliances in this country – refrigerators and spin dryers, so it is not warranted. I think it is probable that other manufacturers would be unlikely to do so too, because appliances are a relatively small part of the total home.

**Allen** But if industry does not take a shot forward every four or five years to see where it lands, and what kind of reaction it causes, like the Monsanto people have done, I do not think any of us are going to learn an awful lot. It is industry we have to look to, though not in isolation. But this poses one problem which has been discussed in relation to a number of industries lately. Someone like Worssam here, makes two appliances or they make one appliance or they make door knobs, but not window knobs, so you cannot get ranges of fittings which are consistent in character.

**Smithson** I think that is a terribly important point. It may mean bigger companies taking a wider interest in building components, which would mean that one firm would make not only the fascias for the cookers but they could also make the door furniture, window latches, fittings and roses for the ceilings. At present it is an absolute agony in this country to choose fittings from a catalogue.

**Farr** Worssam, Bilsland, do your companies make any effort to sell appliances *en suite*?

**Worssam** No, we do not mainly because we do not manufacture a wide enough range.

**Bilsland** We do, we obviously must do, because we make the complete kitchen; everything electrical for the home and that has been for 75 years our selling point.

**Allen** I do not think the present English house lends itself to the purchase of these things and people do not have enough money to remodel complete kitchens very often.

**Smithson** The argument that both Lyons and I put forward is this – why should they? Why cannot the appliances be changed technologically and improved every five years, so that people have the opportunity of replacing them instead of buying *en suite* and staying *en suite*, which seems to me to be economically impossible? I myself have practically no appliances for economic reasons, and I suspect most people have not. Therefore I want to be able to get the best at the moment. Let us somehow arrive at a concept of appliances that assumes that they are going to be changed rather than that they had some commonality in character. I prefer the things that cannot be moved, the absolutely fixed things like sinks and heavy units to be put into a box. The things that can be moved you can select and group together for stylistic or symbolic reasons, so that they accord with your present way of life. Under certain conditions, no matter how well intentioned styling is, there will inevitably be a conflict. Under those conditions it is better to have a box to put them away in and take them out and display them together when the situation demands.

**Worssam** There is one point I would like to make on behalf of the manufacturer of major appliances. He has to think of the style of the product he is going to be making at least 18 months ahead, because it takes him that time to develop it and build it. We in the appliance industry have to try to think in the future as regards styling, and that is why we study publications and so on, and try to interpret what the trend is going to be. This should help us to keep up with people like the rest of you round this table who are trying to do exactly the same thing in fields adjoining ours.

# SLUMP

JOHN T. MURRAY

*Why are mills in Lancashire closing? Part of the answer is provided in this article by Dr Murray, a Lancashire textile manufacturer, who stresses the urgency for better design standards in a large section of the industry as a defence against foreign competitors.*

IN 1913 LANCASHIRE TEXTILES accounted for nearly one third of the total value of Britain's manufactured exports and two thirds of the world total import of cotton goods. Today Britain is a net importer of cotton goods and scarcely a day passes without some Lancashire mill closing. The fantastic transformation which has taken place in Lancashire's fortunes is, in its scope and speed, without parallel in the annals of industry. It illuminates dramatically the remorseless spread of technical knowledge which has undermined our role as the workshop of the world. It represents a challenge which this nation must meet repeatedly as more and more infant industrial nations reach maturity.

A great deal of Lancashire's decline was inevitable: the product of historical forces beyond our control. Much of it was self-inflicted, born of the complacency and conservatism which flourish in prosperity. But the key to past failures and the hope of future survival lies at a much more fundamental level. The Industrial Revolution divorced the man who makes from the man who conceives, a divorce which is at the root of much that is bad in our industrial society. But it also substituted the mercenary *parvenu* for the cultivated gentleman as the decisive arbiter of our manufactured environment. While the unprecedented prosperity consequent upon our early monopoly of the industrial revolution obtained, the disastrous implications of these changes were not appreciated. A starving man is no gourmet: the world's poverty-stricken peoples closed their eyes to aesthetic considerations in the face of the cheap prices which Lancashire's steam-driven factories made possible. And the Manchester man, intoxicated with technical mastery and financial success, gave birth to the Manchester style.

## Quality debased

The Manchester style is a testament to the sterility of the nineteenth century mechanistic vision. Because it did not recognise the vital role of the creative human spirit it regarded design as it regarded the sacred principle of making money. It is from this major error, made in more halcyon days, that Lancashire's present problems stem. It has led to widespread debasement of quality. There is more muck made in Lancashire today than ever before in her history. The only bright spot in recent years was the period of the Utility specifications

when proper minimum standards were imposed upon the industry. Today a vast proportion of the total output of furnishing fabrics, for example, is printed on what under the Utility scheme was designated as a dress cloth and which has since been progressively debased, until it is scarcely a cloth at all.

But clearly, although restoration of quality standards is an urgent need, the more positive advantages of good design and inspired colouring are essential prerequisites of a resurgence of Lancashire's export trade and successful defence of her home market against foreign competitors. It is here that we face our most difficult problem. The problem has its roots in the fact that in most cases the decision as to what shall be made rests with totally insensitive and untrained people. Companies which would not move an inch in financial matters without the professional guidance of an accountant, which go into a huddle with their lawyers at the first whiff of litigation, delegate responsibility for design decisions to men totally innocent of natural talent or professional training.

## Designers stultified

The folly of this policy was concealed when prosperity and technical monopoly was the order of the day. But today, when public acquaintance with good design is increasing daily and when Manchester's traditional design standards can readily be achieved by the least skilled foreign producers, the gap in Lancashire's resources has become manifest. Until the decisions as to what shall be made and what shall be bought, in our factories and distribution agencies, are placed in the hands of men trained in the visual arts, we shall fail to generate that advantage which stems from the cultural richness of our society and which alone gives us a potential edge over the newer industrial nations. The present system is as absurd as if an opera company were to delegate the selection of its performers to the deaf; and the disastrous consequences follow just as inevitably in the one case as in the other.

Designers themselves would, of course, be considerably improved if they had the discipline of enlightened patronage. I can conceive of no more degenerative process for a designer than to work in industries where his success depends on the whim of

*continued on page 69*



## New Zealand

## Market of rising taste

VICTOR L. BECKETT

*This final article in the series on selling to the Commonwealth discusses British trade prospects in New Zealand, the smallest of the four countries considered. The author, who is managing editor and founder of the New Zealand monthly journal Home & Building, describes current buying habits and preferences in a community which spends a high proportion of its income on durable consumer goods.*

THERE ARE 2½ million New Zealanders, living mainly in two islands which stretch 1,000 miles from the sub-tropical north to the almost sub-arctic south. Climatic variations do not much affect ways of life or buying habits. The population is de-centralised – 41 per cent live in the four main centres, Auckland, Wellington, Christchurch and Dunedin – 16 per cent in 14 towns with from 10,000 to 42,000 inhabitants, 10 per cent in boroughs from 2,000 to 10,000, and 33 per cent in rural areas. This de-centralisation means that selling and distribution are expensive.

The population lives in 563,000 houses or flats, 67 per cent owned and 33 per cent rented or free with job. Of every 100 of these households 86 have a piped water supply and 88 a hot water service, 94 have bath or shower, 81 a WC, 54 a refrigerator and 58 an electric washing machine; 63 cook by electricity and 18 by gas, and about 90 have radio receivers. We have recently been completing about 19,000 new homes or flats a year at an average cost of £2,660. The labour force is 833,000 and most trades pay wages of from £12 to £13 a week.

Thus New Zealanders as a whole have a fairly high, evenly distributed buying power and a widely dispersed settlement. In addition there is a uniformity of amenities, tastes, entertainments and education. With their welfare state, cheap food, sports and entertain-

ments, New Zealanders spend their money on things and it is obvious from the number of their possessions that they buy goods of medium quality. It is not uncynical to say that the New Zealander has realised completely his ideal of mediocrity. Until very recently this has applied most strongly to matters of taste.

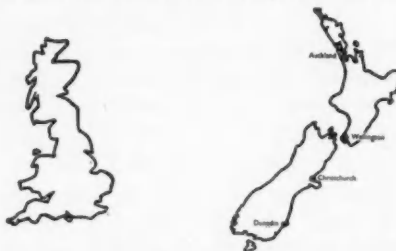
**Improving design standards**

Since the war, however, New Zealanders have become aware of, and have been able to buy, much better designed textiles, ceramics and appliances, more interesting foodstuffs and fripperies. They have begun themselves, to make better furniture and carpets, buildings and materials, cakes and wines. Interest in the fine arts, ballet and theatre has increased. Our University School of Architecture is turning out some excellent designers, but as yet we have no counterpart of Canada's or Australia's industrial design council.

New Zealand design and related consumer tastes vary in different fields. There are small to medium shops and manufacturers making a living out of good modern furniture who certainly could not have done so 10 years ago. Radio cabinets are improving, so are Murphy designs being made locally. Lighting fittings are most encouraging. The best (English metal) and the worst (Australian glass and imitation candelabra) are imported, but there is a wide variety of medium to good locally made fittings in spun metal and other materials. Many of the better interior schemes use local felt, woven flax floor coverings, or the one or two good carpet designs that are available. One local space heater seems better than most of the stovey-looking imported ones. In moulded plastics we make many odds and ends, often structurally weak. We are making reasonable looking handbags and travel goods, but quality is well short of those from England. We make good aluminium kitchen ware, and one local potter is building up important ranges of porcelain and earthenware, using good shapes and patterns.

By far the greatest quantity of imports is from the UK – over 53 per cent of the total in 1956, compared with 25 per cent from other Commonwealth countries and 21 per cent from all other sources abroad. If import restrictions will, however, temporarily reduce these figures and will stimulate local manufacture.

Looking at individual imports, wallpapers come almost entirely from the UK, and good modern patterns



New Zealand and Great Britain shown to the same scale. Two thirds of the population of 2½ million live in the four main centres and 14 other towns, while the others live in rural areas.

1 Home of an Auckland architect, designed by Peter Mark Brown.



2 Examples of furniture from the *Modernage* range of 28 pieces. It is significant that this range is marketed, not by a small specialist shop, but by a large time-payment house. DESIGNER and MAKER Maple Furnishing Co Ltd. Bed settee £36 10s 3d, room divider £40 19s 6d, nest of coffee tables £12 19s 6d

3 New productions in a variety of shapes, patterns and plain colours. MAKER Crown Lynn Potteries Ltd. Cups and saucers 3s 3d each, Gingham ware £4 for 36 pieces.

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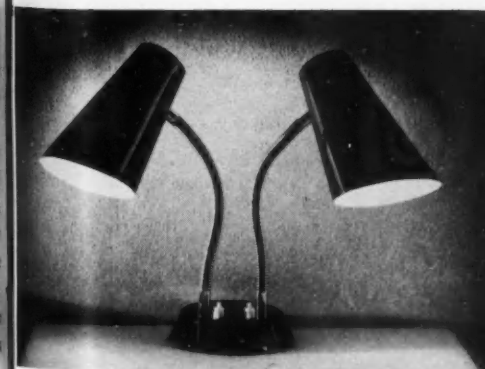
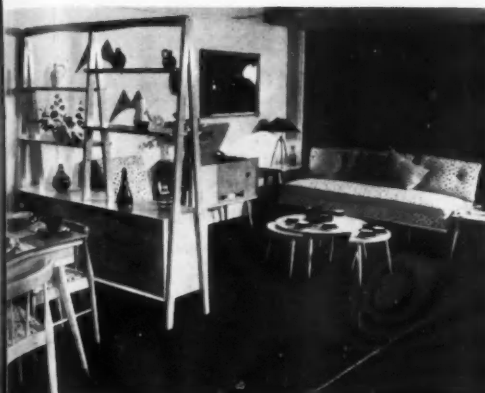
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4 The black iron frame of this chair is made in New Zealand, the natural woven cane bucket seat being imported from Hong Kong. Marketed by John Crichton Ltd, £8 8s.

5 Table lamp with anodised aluminium shades in several colours, the insides being enamelled white. DESIGNER and MAKER Modern Appliances Ltd. £7 0s 6d.

Approximate New Zealand retail prices are quoted.

are widely available. The same goes for fabrics, although some of the more stimulating designs are among the small proportion of Continental and American imports. Of carpets and linoleum 98 per cent come from the UK; quality is good but there is a depressing proportion of heavy floral designs. English china sells in great quantities, but in shop windows the dramatic items are often from Sweden or Western Germany. There has been wide distribution of Swedish and cheap but good Belgian glass. Stainless steel tableware will catch on here if available; some of the best examples so far have been Swedish. British lines, like Prestige kitchen ware and Salter scales, appear to do well. Of the 31,000 domestic sewing machines imported in 1956, the most aggressively marketed all appear to be Continental – an English manufacturer might well look into this. Clocks and watches come chiefly from Switzerland or Western Germany. There are some excellent electric clocks from the UK, but why those dreadful mantel models?

The old complaint is sometimes heard that British manufacturers do not seem to take this market seriously – that they do not bother to find out what we need. But often it is not the UK product which is deficient but its salesmanship. Exporters should rely fully on New Zealand advertising agencies, the best of whom are competent and much more closely in touch with the market than a UK agency could hope to be.

In some fields opportunities will never again be large. With our increasing production of domestic appliances, imports will be limited to a few special models. But demand for British wallpapers, furnishing fabrics, china and glass is assured. However, more dramatic patterns, a few more daring shapes, are needed to ward off competition from Continental and Scandinavian exporters. Carpet designs are one of the greatest weaknesses among English exports, and some of the good patterns that are produced for sale on the home market would be readily acceptable by New Zealanders. There should be a wonderful opportunity for three-wheeled miniature cars. Already a few Messerschmitts and others can be seen in the streets, and in view of rising petrol costs and the growing parking problem they would be ideal for one-car-plus families, housewives shopping, salesmen, etc. A ready market exists for sports equipment of all types and as a nation which is enthusiastic to 'do it ourselves' all types of power tools and home workshop equipment are popular.

Of all the Commonwealth, New Zealand is the mother country's most dutiful child – the UK is still commonly called 'home'. But New Zealand should not be taken for granted. It is a middle class country with time and money to spend on leisure and on making the home environment more comfortable and satisfying. Its developing tastes should not be underestimated by those who regard it as a safe, traditional market.

6 Examples of some popular, mostly imported, designs. Cup and plate from J. & G. Meakin Ltd, England, 30 piece lunch set £3 12s; pottery mugs, 6s 9d each, and jug, £1 4s 6d, by Bernard Leach also from England; stainless steel dish, jug and cutlery by Gense from

Sweden – cutlery £2 10s 3d for 7-piece setting; Walnut pepper mill from England 19s 6d, and salt shaker 18s; oil bottle from New Zealand craft potter Charles Bond-Smith, 13s 6d. Wicker tray from Hong Kong, 11s 6d.





## Brussels: a last look



*1* Belgian Self-service restaurant in the Marie Thumas pavilion. Each table consists of four separate tops cantilevered out from a single support so that the normal problem of battling with table legs in a crowded restaurant is overcome. Cruet set and table lamp are mounted above the central column. Beneath the table is a wire parcel rack.

THE GREAT INTERNATIONAL EXHIBITION at Brussels is now over. More than 40 million people have passed through the turnstiles and have thronged the avenues and filled the pavilions to stare at the massed display of the world's customs, industry, science and art. Many memories will remain – of excitement at new discoveries, of disappointment where promise was not fulfilled, of frustration when rain interrupted a crowded programme, of bewilderment and exhaustion as each new vista urged tired feet to a stoic endurance.

To those of us whose travel abroad is confined to the rarely afforded holiday or the hurried business trip, Brussels will remain our substitute for a world tour. Unconsciously, perhaps, when Russian science or agriculture is in the news, our minds will recall the sputniks, the machine tools, the combine harvesters or maybe the blonde and buxom peasant painted against a vivid green and purple landscape that *we* noticed in the USSR pavilion. Likewise, we shall think of Thailand, or Israel, or America, or any of the other 40 or so countries, for their pavilions, to us, will be the countries themselves. This is the final justification for the enormous sums spent on such a transient affair; the rewards for each nation will never be counted.

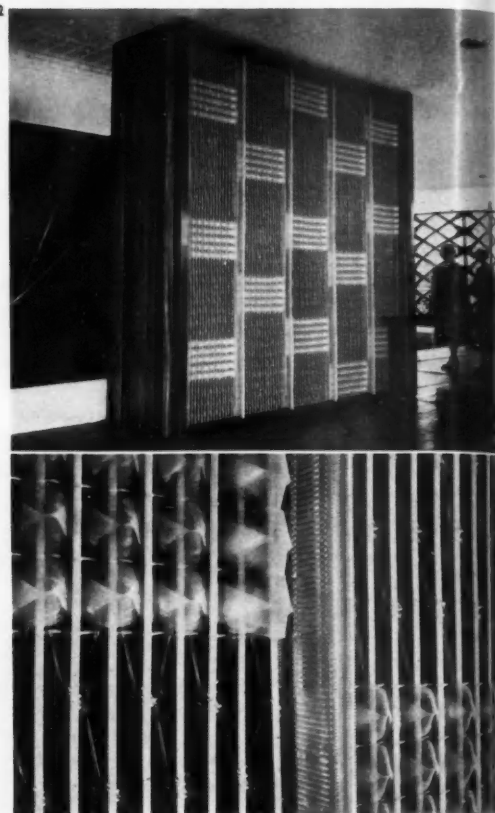
During the months since its opening, *DESIGN* has guided the reader through some of the high spots of this vast exhibition – in July to those pavilions which told most effectively the story of their countries' achievements, in August to those products which showed new thought and experiment in design, in September to the techniques of display which had been used to convey these ideas and achievements to the world at large. Yet these conducted tours through the pages of *DESIGN* could not hope to encompass the entire range of exhibits. Many other items deserve to be remembered and a few of unusual interest are illustrated and described in this retrospective look at the exhibition.

*continued*

## BRUSSELS: a last look

**2 Germany** General view and detail of a screen in the German pavilion. It is composed entirely of interwoven transparent thermo-plastics strips and shows a clever exploitation of new materials to produce an unusual decorative effect.

**3 USA** Portable transistor radio, the first, it is claimed, to be powered by the sun's energy, for which a special 'sun power pack' is available. This pack, shown in the foreground, has 32 cells which pick up the rays from the sun (or from a 100 watt incandescent bulb) and convert this energy into electric power. The set is provided with batteries for use when no sunshine or bright incandescent light is available. What a pity, however, that this revolutionary equipment should be housed in such an overstyled and pretentious cabinet. **MAKER** Admiral Corporation.



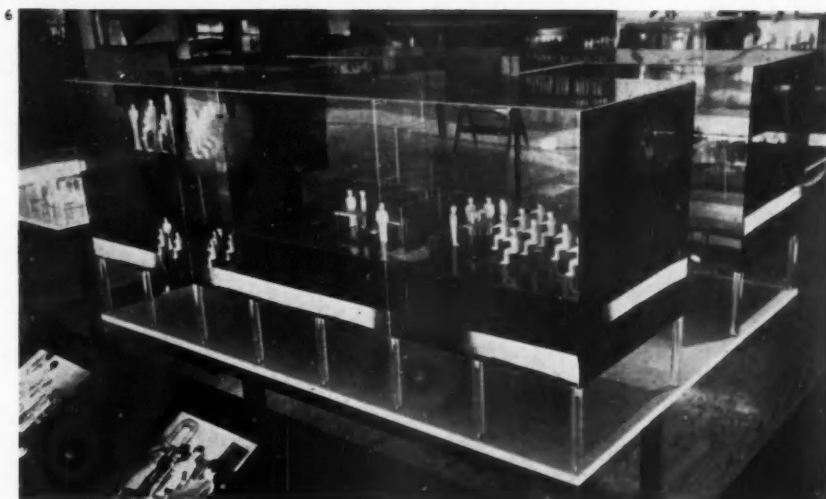
**4 Austria** This chair in the recording section of the Austrian pavilion conceals an earphone in the headrest, so that recordings can be heard without disturbing other customers. Compare with similar device in the IBM pavilion (DESIGN August page 47).

Sam Lambert

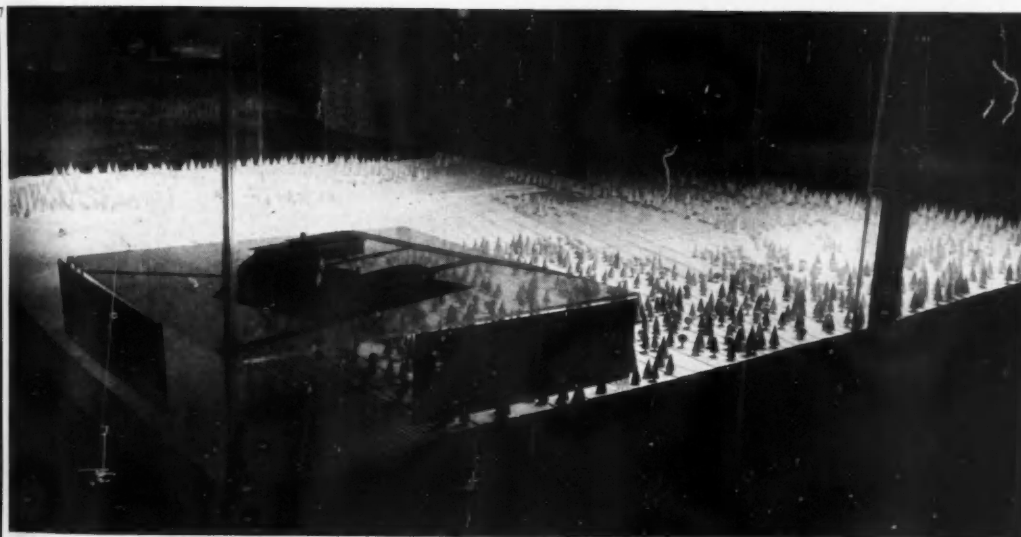
5 *Germany* Among the many commercial exhibits in the main Belgian section was this dramatic pavilion sponsored by the well known German sewing machine manufacturer, Pfaff, in conjunction with four other German firms: Braun (radio and electrical equipment); Rasch (wallpapers); WMF (tableware in glass and metal); and Rosenthal (pottery). The pavilion designed by Professor Horst Döhnert was a remarkable example of co-operative enterprise in a group of firms among whom good design was presented as a fundamental aspect of their policy.



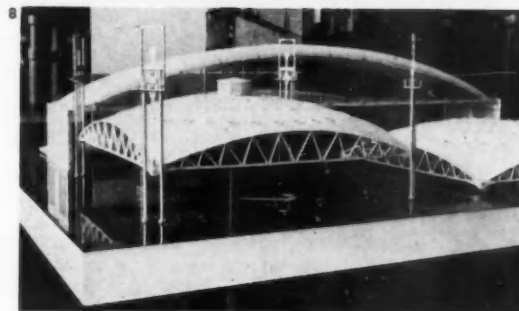
6 *Germany* Models form a natural element of exhibition and display design. At Brussels a great variety of all types was to be seen. This model, in Perspex, shows German systems of technical education. Push buttons allowed visitors to select, by isolated lighting arrangements, the place of individual classes within the educational sequence.



7 *Finland* Another model showing a typical Finnish family holding made entirely of untreated wood – reflecting the dominant material used in the construction of the pavilion. Small cones and balls symbolised the forest landscape surrounding the fields of stooked corn and the farmhouse with its out-buildings. Flat strips of wood were built up along the contours of the undulating land like a map suddenly brought to life.



8 *USSR* Unlike the two models shown in 6 and 7, which set out to convey their ideas and information through symbols, this model was frankly realistic and finely detailed. It showed an experimental technique of lifting reinforced concrete domes and arched roof structures into position by means of specially designed cranes.



Austrian  
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compare with  
page 47).

## France: plan for hotels

THE FRENCH HOTEL INDUSTRY is faced with problems that are directly comparable with those of the British industry, which were discussed in detail in a special issue of *DESIGN* on the subject in January this year. In broad terms there is a vast legacy of old hotels which are uneconomic to run and which do not provide the standards of amenity and comfort expected by visitors from abroad. The French tourist industries are particularly anxious to attract custom from the USA and are conscious of the need to match the high standards to which American travellers in their own country are accustomed.

As in Britain, new hotels are often too expensive to build if a reasonable return on capital invested is to be achieved. The solution lies, therefore, in the intelligent conversion of the older buildings that already exist.

The French hotel federation – *Fédération Nationale de l'Industrie Hôtelière de France et d'outre-Mer* – took a bold and imaginative lead in staging, in the Paris pavilion at Brussels, a display of room settings to show how these conversions could be carried out. It is significant that the federation has not been beguiled by popular tourist predilections to adopt an old world attitude in these schemes. They are outspokenly modern down to the smallest detail and reveal a clean, well ordered approach that demands a new assessment of French interior design.

Three separate schemes – for two, three and four-star hotel rooms – were presented. Most of the older French hotels have rooms which are too large for modern requirements but have no bathrooms. The basic element of all three schemes consisted, therefore, of a partition unit to divide the available space into bedroom and bathroom areas. The partition units themselves were designed to be prefabricated and on the bedroom side contained cupboards, drawers, housings for radio, telephone, etc, which dovetail with spaces on the other side for bath, WC, wash basins and so on. Much of the remaining furniture in these rooms was specially designed and represents the results of the federation's experience of what is needed in hotel furnishing. The outcome of this work can be seen in the accompanying illustrations.



1 Two-star scheme. This general view shows a neat continuous shelf unit along the window wall which serves as dressing table, writing desk and storage space for luggage. The dressing table mirror folds down flush with the rest of the top. The lamp is mounted on a flexible support and can be moved to any position. The end of the partition unit can be seen on the right of the picture. Colours are fresh and gay – red chair, cushion and floor ash tray; yellow bed cover; khaki green carpet; white walls and ceiling. INTERIOR DESIGNER *Pierre Broc*.

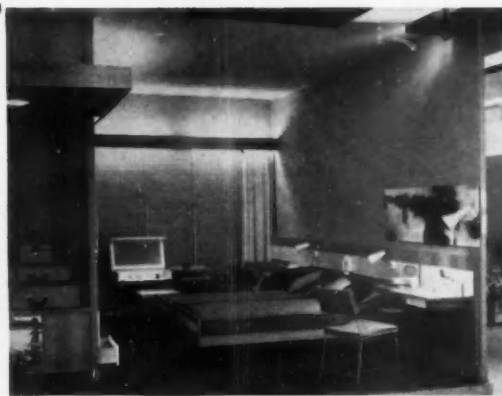
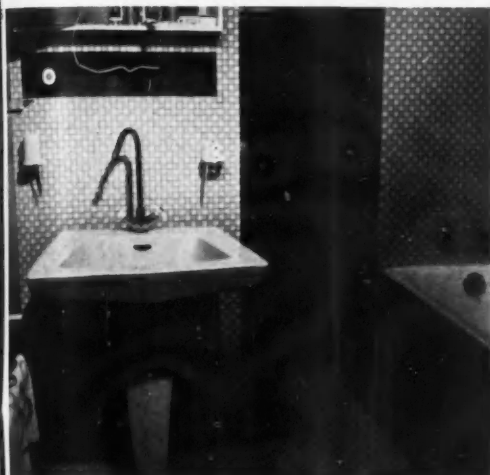
2 Two-star scheme. Close-up of the divider unit containing radio, recess for telephone, pull-out bedside table with a rail for the morning paper. On the right (out of picture) is a full length hanging cupbboard.

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3 Three-star scheme. The end of the divider unit forms a small entrance lobby designed for general storage. The fold-down foot rest is for shoe cleaning, the bin for dirty linen. Other drawers face into the bedroom on the right. Entrance to the bathroom is on the left. INTERIOR DESIGNER *Geneviève Pons*.

4 Three-star scheme. General view with the end of the divider unit on the left of the picture. The bed-head unit contains radio, light switches, telephone, reading lamps and writing desk mounted on a white plastics strip. Walls, carpet and arm chair are grey; bed covers are sage green; curtains, dressing table seat and some cushions are yellow.

5 Three star scheme. General view of the bathroom. The bath, right, occupies a recess in the partition unit. Beyond is a large storage cupboard opening into the bedroom. The basin is a new design by Cie Glé de Construction de Fourou. Behind is the WC and bidet. The bathroom cabinet gives 180° reflection for shaving, is internally lit and contains an electric-shaver socket.



6 Four-star scheme. The bathroom has a fitted shower in addition to bath, double basin, WC and bidet. The wall in the background is painted deep blue. INTERIOR DESIGNER *Gautier de Laye*.

7 Four-star scheme. The bedroom, which sets out to give a feeling of luxury, seems over rich and ponderous in contrast with the other two rooms. The television swivels and can be seen from the bed or sitting area. Entrance to the bathroom is through a gap in the partition unit which has two-way cupboards facing into an outside corridor. This allows shoes, dirty linen, etc, to be removed by maids without entering the suite. Elaborately fitted cupboards have full length mirrors giving all-round reflection.

# Your letter heading is your ambassador



Frequently, a letter is your first contact with a business organisation. Can you honestly claim that your existing letter heading gives the best possible impression to the recipient? Or that it is as dignified as it ought to be? That it looks "good quality" and is of appropriate design?

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## PEOPLE

### The Design Centre in the North

The exhibition *The Design Centre comes to Newcastle*, a small scale version of The Design Centre, in the store of Bainbridge & Co Ltd, opened recently and is the latest of a number of exhibitions this firm has held dealing with different aspects of good design. The present managing director and chairman of Bainbridges is George Bainbridge, although the firm itself, which was established in 1838, became a member of the John Lewis Partnership in 1953. Mr Bainbridge was the store's furniture buyer before the War, and his interest in furniture was awakened, he said, when he was an undergraduate at Cambridge and happened to pass through Broadway where he saw furniture by Gordon Russell. When he was furniture buyer at the store the general standard of design, Mr Bainbridge said, was at a low ebb. However there were a number of manufacturers producing well designed goods and it was to these that he turned.



George Bainbridge

In 1946, after serving in the Royal Artillery during the War, he became joint managing director and had a hand in shaping the firm's post-war furniture-buying policy. "We decided" then, he said, "to throw in our lot with manufacturers who were producing contemporary designs, which even in the years immediately following the War, sold well, and created a steady interest and demand."

As well as the displays staged in co-operation with the CoID, Bainbridges arranged a large exhibition in 1954, called the *Contemporary Home Exhibition* which, said Mr Bainbridge, proved to be a stimulant to business a year after it closed.

The *Design Centre comes to Newcastle* will be featured in DESIGN next month.

### The physics of lighting

Atlas Lighting Ltd has recently brought out a new design for a post-top street lighting lantern, RIGHT, by Richard Stevens, the firm's chief designer. Mr Stevens is one of the leading designers of lighting in the country and his street lighting lantern *Alpha 1*, was awarded a gold medal at the *Triennale* in Milan last year. He studied physics at the Regent Polytechnic and became interested in design at the time of the *Festival of Britain* when Neville Ward was consultant for Siemens, where Mr Stevens was then working. The only training he had in appearance design was by keeping his eyes open and meeting designers, especially at the SIA, where he is secretary of the engineering products group, coupled with the trial and error method of arriving at a solution; there were a lot of errors, he said.

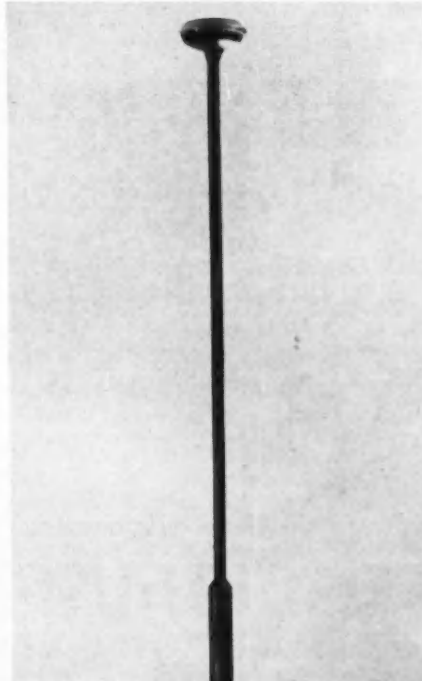
Speaking of the training of designers, Mr Stevens said he would advise any prospective designer who wants to work in industry to study for a degree in a technical subject rather than go to an art school. He feels that if the person has any aesthetic sensibility at all it could be developed by such things as extra-mural activities, which ideally a technical course should provide.

The designer of lighting fittings is necessarily governed by fairly rigorous technical requirements, and



Richard Stevens

Mr Stevens finds this congenial, for he allows his designs to grow from these strictly functional requirements rather than from imposing any *a priori* aesthetic from without. Asked whether he ever considered branching out into any other aspect of design, he thought that, apart from the furniture he has made for himself, his knowledge of the problems of lighting design made him reluctant to attempt to design anything else without first acquiring an equivalent knowledge. However, he feels attracted to certain fields of design, such as scientific instruments, that present problems as complicated as those in lighting design.



A model of the Atlas Lighting Ltd post-top lantern

### Sir Stephen Tallents

His many friends and admirers, known and unknown to him, will have heard with sorrow of the death of Sir Stephen Tallents. I myself last talked to him, appropriately enough, at a launching party for the first comprehensive book on public relations to be published in this country; a book to which he had contributed a graceful introductory chapter, reminiscing on his own notable career in public relations and offering those understanding and enthusiastic words of encouragement to the budding public relations officer which he was always so ready to do.

Sir Stephen had already had a considerable career as a civil servant before he became, in 1926, secretary of the Empire Marketing Board. But it was here that he took up a new interest, not only to him but in this



Sir Stephen Tallents

country - public relations. In his work with the board, the publication of his pamphlet *The Projection of England* in 1932, and later as public relations officer of the General Post Office, Sir Stephen built a high reputation. Indeed, he is regarded by many people as the father of public relations in Britain. In 1948, when the Institute of Public Relations was set up, Sir Stephen became its first president and was again elected president in Coronation Year.

Perhaps a key to his success was his encouragement of high artistic standards in the various public relations media he used, particularly posters and the documentary film. Among many other fields he took a deep interest in design and was, in his later years, closely associated with the Design and Industries Association, being its president in 1955 and 1956.

Sir Stephen brought the same combination of charm and graciousness with a catholic enthusiasm and imagination to his public life and, in the serenity of his home at St John's Jerusalem, to gardening, willow growing and the other country crafts which he loved so well.

JOYCE BLOW

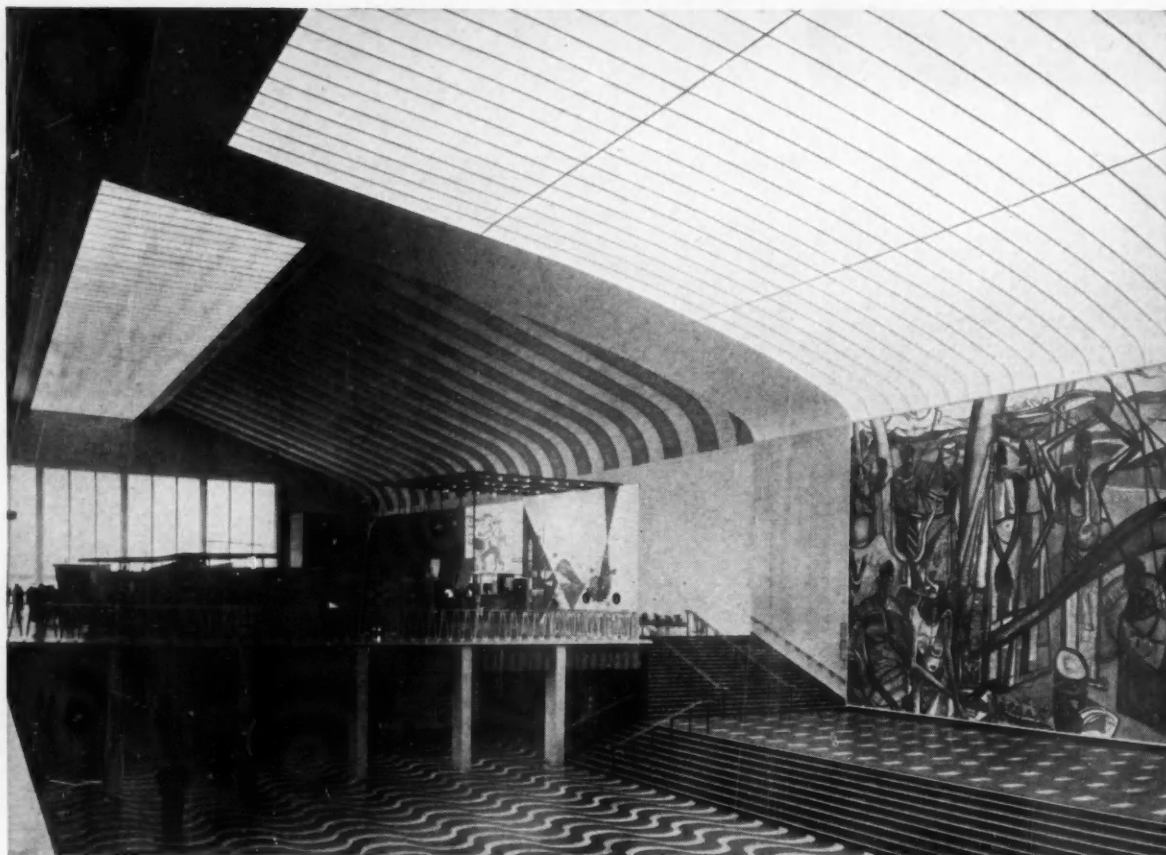
## AWARD for ELEGANCE

### The Duke of Edinburgh's Prize

The CoID announces the establishment of The Duke of Edinburgh's Prize for *Elegant Design*. This annual award has been instituted on the initiative and through the generosity of HRH The Prince Philip, Duke of Edinburgh. It shall be given for "a contemporary design in current production distinguished by its elegance". Only such products as have been shown in The Design Centre shall be eligible for consideration.

The winning design shall be chosen by an independent panel of four judges appointed at the Duke's invitation. His Royal Highness, or his nominee, will act

continued on page 65



*Part of the Belgian Congo Pavilion which incorporates the largest single Lumenated Ceiling installation in Europe. Some idea of the scope of this installation can be obtained by comparing its size with that of the figures in the foreground.*

*International triumph for*

## **LUMENATED CEILINGS** at the Brussels Exhibition

The evenly diffused and shadowless lighting provided by the Lumenated Ceiling technique has scored an international success as the lighting system for many pavilions at the Brussels Exhibition. In one alone, the Belgian Congo Pavilion, an impressive area of 27,000 sq. ft. has been installed. Just over double this area is used throughout the Exhibition as a whole, by the United States, Venezuela, the U.S.S.R., and on many other international pavilions and trade display stands.

*A BRILLIANT NEW IDEA IN ARCHITECTURAL LIGHTING*

## **LUMENATED CEILINGS LIMITED**

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as chairman of the panel. The rest of the panel shall normally be equally divided between the sexes, one man and one woman retiring each year, and no member other than the chairman serving for more than two years consecutively.

The following have accepted the Duke's invitation to serve on the panel to choose the 1959 award from among the products exhibited in The Design Centre during 1958: Lady Casson, Miss Audrey Withers, Mr Basil Spence, Sir John Summerson.

The *Prize* shall be given personally to the designer of the chosen product. In cases where more than one designer may be concerned in the product, the manufacturer shall be asked to nominate the one who, in his opinion, has contributed most to its success. The *Prize* shall take whatever form the winning designer chooses provided that it shall not cost more than £100 and that it can carry a suitable inscription.

The prizewinner may either design the *Prize* himself or commission another designer to do so. The CoID will arrange for the *Prize's* manufacture whether by a firm, by a craftsman or, in suitable cases, by a school or college of art.

The *Prize* shall be announced publicly on the occasion of the presentation to manufacturers of the certificates for the CoID's selected *Designs of the Year*. On that occasion The Duke of Edinburgh's prizewinner shall receive a special certificate. The actual *Prize* shall be presented at the same ceremony in the following year, to allow time for it to be made.

## REPORTS & CONFERENCES

### Variables in human behaviour

A paper read at a recent symposium on training, organised by the Ergonomics Research Society, suggests that such basic assumptions of modern design as clean appearance, no clutter, everything within easy reach, plenty of light, contradict human requirements in many circumstances.

In a paper on *Habitability requirements for long duration missions*, Commander Dean Farnsworth of the US Navy Office of Naval Research, stated that submarine crews and isolated radar watchers were happier with cluttered environments, fluctuating lighting, and controls that demand movement. Study of behaviour in what was called the "visually impoverished environment" (eg a display of nice clean modern instrument panels in a pastel shade) suggests that long duration watchkeepers need surroundings that are stimulating rather than comfortable. These conclusions are confirmed in recent studies of people in industrial situations entailing long periods of isolated and uneventful watchkeeping.

### STATIC CONCEPTION OF HUMAN BEHAVIOUR

Examples of the tendency to regard people as machines are the numerous past and present attempts to design chairs by taking plaster impressions of a single ideal sitting position. Ergonomic studies of seating (Vernon 1924, Åkerblom 1954) show that there is no single ideal sitting posture and recommend a chair that allows unconscious and frequent changing from one posture to another. It has also been shown that factory workers do not give their best performance when they have to keep pace with machines, but that they give greater results with less strain if they can make considerable changes in pace whenever they feel inclined.

### RANDOM ELEMENT IN ERGONOMICS

But it may be equally inappropriate to rush to the opposite conclusions and make human utensils and surroundings as 'natural' and unmechanistic as possible. Some of the basic assumptions of modern design that spring from a romantic retreat from machines may be equally mistaken. The historical evidence of the cathedrals, for instance, suggests that it is mistaken to think that a wholly artificial environment with no view outside through windows is uncongenial or that indoor lighting need imitate the 'natural' lighting of outdoors.

Equally mistaken would be an attempt to put these recent ergonomic findings into practice by assuming that any kind of stimulation, any kind of clutter, any kind of variety or change, is appropriate to human surroundings. There must surely be special kinds of stimulation and change appropriate to each kind of human activity. The discovery of these variables and their precise translation into appropriate designs must be a long and patient task. We can expect the results to be marked by a newness, originality and value that marks all attempts to bridge the art/science gap.

### The cylindrical line



The subject of a recent paper delivered at The Institution of Mechanical Engineers by Raymond Hicks was Theoretical analysis of the stresses induced in a spherical pressure vessel due to the constraining effect of a cylindrical skirt. For anyone wanting a clearer picture of the subject the art editor of *DESIGN* has obliged.

### Limitations of language

In addition to the annual design conferences at Aspen, Colorado, designers in America now have the summer programmes of the Centre for Design Studies, a division of the Institute of Contemporary Arts, Boston.

F. C. Ashford, the industrial designer and reader in industrial design (engineering) at the Royal College of Art, attended the second of these programmes called *Communications for designers* held recently at MIT's Eddicott House, Dedham, Massachusetts.

The programme was organised by Theodore E. Jones, the academic direction was under James R. Shipley, head of the department of art, University of Illinois and faculty members included Stewart W. Holmes, professor of communication at Boston University; George F. Lombard, professor of human relations at Harvard Business School; Gyorgy Kepes, professor of visual design at MIT, and senior executives from leading business and industrial organisations.

Course members included designers, design directors, engineers, educationists and supervisors of presentation and personnel training. The majority were sponsored by their companies which included the Boeing Airplane Co, Sylvania Electric Products Inc, Gillette Safety Razor Co, Westinghouse Atomic Power Division, Owens-Illinois, and others.

Mr Ashford reported that this particular course was excellent in its arrangement, choice of teachers and the easy, informal atmosphere which enabled the group to work for 12 hours a day.

### SEMANTICS AND VISUAL SIGNALS

An analytical approach to problems of semantics, personal relationships and the synchronisation of the various levels of visual signals soon showed that effective communication is not instinctive.

Problems inherent in the translation of visual impressions into verbal ones are no less for the designer than for the layman. Indeed, they may be greater since the designer works largely in the area of visual ideas, yet has a responsibility to communicate those ideas properly to others. In a highly organised sphere of activity such as product design, the discharge of this responsibility forms an important part of the designer's total function and the prime objective of the course was to assist students to become better designers through better communication.

### ACCUMULATIVE DISTORTION

Through the agency of various techniques and devices it was clearly established that while we live in a world of differences, language is adjusted to a world of similarities and is at best a limited means of communication. Indeed, with the many possibilities for accumulative distortion through physiological and psychological causes, it is not surprising that the tolerances of communication are too often too coarse, while the complex machinery of personal relationships demands the finest tolerances and the highest precision possible.

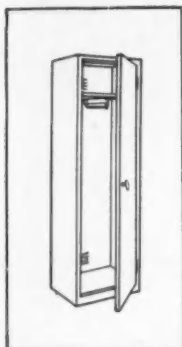
The organisers hope that more students from Europe will attend these programmes and details of next year's course, provisionally entitled *Marketing for designers*, will be published in *DESIGN*.

### Art training

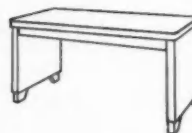
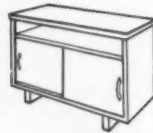
Following on the publication of the report of the National Advisory Committee on Art Examinations (*DESIGN* June 1957), the Ministry of Education has issued *Circular 340*, which emphasises the importance of artists and designers in industry and commerce, and stresses the need for a basic fine arts training, no matter what may be their later specialisation.

The newly constituted National Advisory Council on Art Education (on which the CoID will be represented) will advise the Minister on all aspects of art education in establishments of further education, and one of its first tasks will be to decide the types of courses leading

continued on page 67

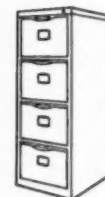


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to a national diploma. The Minister has agreed to abolish the intermediate certificate, together with any form of central examination for the higher qualification. Logically, he has decided that those colleges capable of providing advanced courses should also have the responsibility of examining their own students.

The effects of this circular should be immeasurably to improve the climate of training and, eventually, the professional status of the designer. Not only will there be fewer schools offering a relatively small number of grouped courses, but there is the suggestion - revolutionary to the majority of art schools - that entrants to advanced courses should have reached a satisfactory standard of general education before admission.

## EXHIBITIONS

### For the wall

An exhibition of new wallpaper designs in the Crown range of The Wall Paper Manufacturers Ltd will be at the Tea Centre, Lower Regent Street, W1 from November 7-20. Inexpensive machine-printed papers will be shown in room settings. The exhibition is open weekdays from 10.30 am to 6.30 pm.

### First appearances

The Design and Industries Association is organising an exhibition called *The face of the firm* to be held early in 1959 at the Tea Centre.

The theme of the exhibition is house style and its importance to the progress of British trade and industry. Ian Bradbery, the designer, is working in close co-operation with the DIA exhibition committee: Kathleen Darby, Alec Davis, Michael Farr, Denys Forest, Wyndham Goodden, Margaret Havinden and Eric Paton.

### Extension

Until March 21, 1959, The Design Centre will remain open until 7 pm on Wednesdays as well as Thursdays. This follows the great success of the Thursday late

opening which has brought an average of over 500 extra visitors to The Design Centre each week.

## MISCELLANEOUS

### Gift room

It is due mainly to the enterprise of Leslie Julius of S. Hille & Co Ltd, that there is a British gift room in the UNESCO headquarters in Paris.

When the interior design of the building was being planned, the fact that Britain was one of the few countries not presenting a room was brought to the attention of the British Furniture Manufacturers' Association. The association informed the industry, and received one reply - from Mr Julius.

Mr Julius then went on to interest other manufacturers in the scheme and formed a UNESCO Gift Room Committee, including representatives of Heal & Son Ltd, Dunlop Rubber Co Ltd, Permoglaze Ltd, and S. J. Stockwell & Co (Carpets) Ltd. These firms have provided furnishings and fittings for the room and Robin Day is the co-ordinating designer.

A replica of the room, BELOW, was exhibited in Heal's last month; the UNESCO building itself is to be officially opened on November 3.

### Scottish events

The CoID Scottish Committee's autumn exhibition *House and Home* in the Scottish Design Centre is open until December 6. It includes a special section designed to show that well-designed goods need not necessarily be expensive.

The department of extra-mural studies in the University of Edinburgh, in co-operation with the Scottish Committee, has organised a course of 10 lectures on the theme of *Design in the home*. The lectures commenced on October 6, with a talk by the Rev James Chisholm of the extra-mural department on *You and your environment* and they will run until March 16, 1959. Each lecture is being delivered twice,

with an interval of a few days, and the speakers include Alister Maynard, chief executive, Scottish Committee; J. P. McCrum; Henry Hellier and A. J. Brooke.

### Elegant insurance

Work has recently been completed on the first of four phases in the new head office buildings for the Provincial Insurance Co Ltd, Kendal, Westmorland. The architects of the scheme are Basil Ward and Peter H. F. Stiles of Ramsey, Murray, White and Ward, with Ove Arup as consulting engineer and Cyril



Sweett & Partners as quantity surveyors. An interesting feature of the building is - in fact its core - is a nine-storey filing stack for the company's records.

The illustration ABOVE shows a general view of the director's dining room.

### What is it made of?

The British Man-made Fibres Federation has issued to the retail trade for general distribution a booklet descriptive of the uses and characteristics of the growing range of man-made fibres. The housewife certainly needs all the help she can be given in distinguishing between rayon acetate (now classified officially under that generic name and no longer 'acetate rayon'), Nylon, Terylene, Tricel, Fibrolane and Courtelle, with the American names Acrilan, Orlon and Dynel also becoming familiar.

It is a pity that a booklet so well intentioned and to be distributed so widely is not in itself of better design and appearance. D.J.

### Protective seal

Keeping pace with the trend towards consumer service and protection, the Gas Council has recently announced a new seal of approval for domestic gas appliances. The seal, which is circular, incorporates *Mr Therm*. Devised by the Gas Council, in co-operation with the Society of British Gas Industries, it is intended as a guarantee to the industry's 12 million customers that the appliances which bear it have been tested in the gas industries' own laboratories and have fully satisfied all requirements of safety and performance.

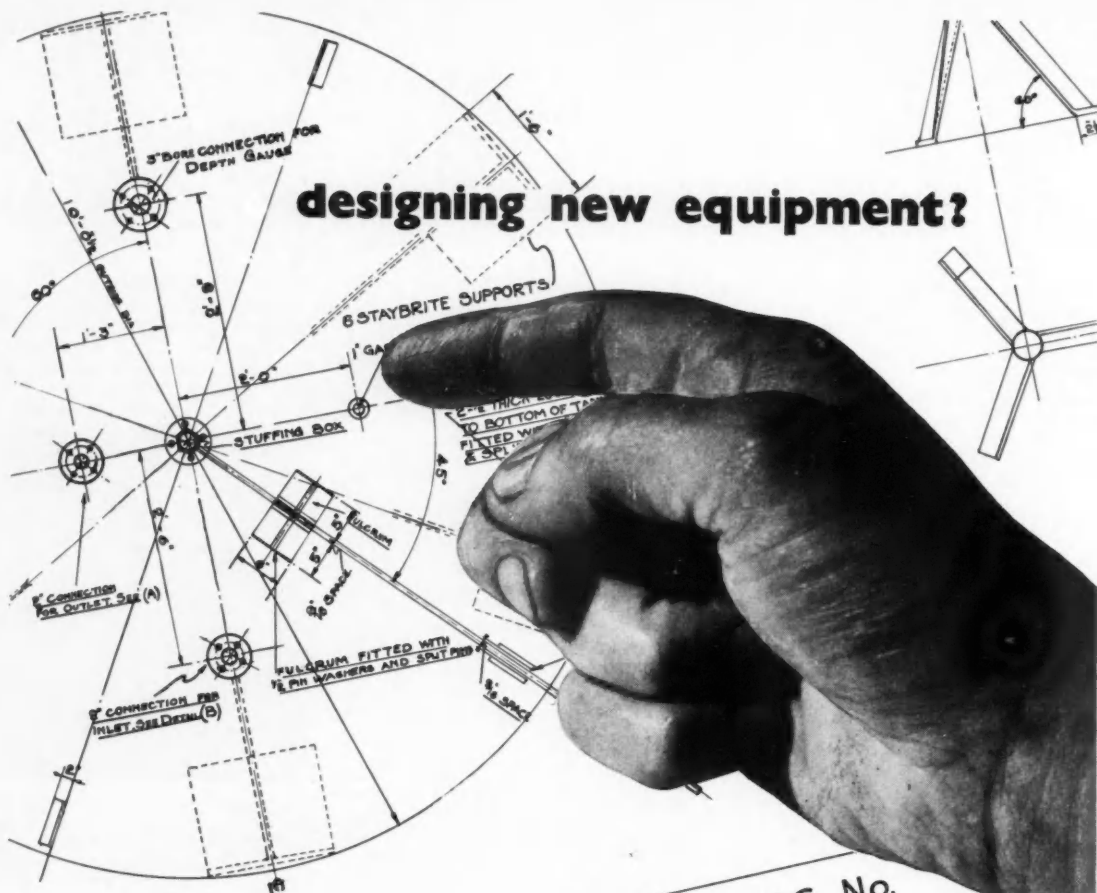
### A handle to your name

A. G. Roberts (Exports) Ltd, 182 Upper Thames Street, EC4, is promoting a competition for the design of a lever handle door set, with prizes of £100, £50 and

continued on page 69



The British room in the UNESCO headquarters, Paris; see Gift room. Drawing by Robin Day.



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£10; the prize winning entries will be exhibited at the Building Centre in January. The design should be based upon the Continental type of lock which does not involve spring-loading the handle. The competition is open to architects, designers and students, and the assessors will be Anthony Cox, Peter H. G. Chamberlin, and Richard Plank. Closing date November 28, 1958; details from A. G. Roberts (Exports) Ltd.

#### Link up

A number of European advertising agencies recently formed EURAS Advertising Service - a co-operative network of agencies in Europe, with headquarters in Zurich. EURAS aims at providing a fully co-ordinated marketing and advertising service throughout Europe, and exchanges of information, research and staff will be made between the member agencies. The UK member is E. Walter George Ltd and the administrative address of EURAS is Bahnhofstrasse 31, Zurich, Switzerland.

#### Motors on show

The Fortieth International Motor Show of Turin will be held this year from November 5-16 at Turin, Italy. Over 480 exhibitors from a dozen countries will be taking part.

#### Change

The Hotpoint Electrical Appliance Co Ltd recently changed its name to AEI-Hotpoint Ltd.

#### This month's cover

This month's cover was designed by Peter Wildbur, a free-lance graphic designer and member of the design group Signa Ltd, and the SIA. He has planned a house style for Gayonnes Ltd and Urwick, Orr, management consultants, and has worked on packaging for Greenmount Oil, advertising design for Sun Engraving and typography for the Arts Council and Aer Lingus.

## LETTERS to the Editor

#### Design protection

SIR: Many industries will be gratified at the prospect of an enquiry into the law affecting the protection of designs used in industry, and I would like to suggest that they should make known their support for such action. Some three-quarters of all applications for design registration are at present made by the textile and jewellery industries; the few applications by other branches of industry must indicate that they cannot find the present system useful, and that there is a case for considering the provision of equally effective protection for their particular requirements.

So far as the British toy manufacturing industry is concerned, it believes that there are four main respects in which the present system is inadequate to its needs. Firstly, modern techniques of reproduction make the present registration system too slow and cumbersome; since the Registered Designs Act was enacted in 1949, communications throughout the world have so much improved that today a model can be taken from an exhibitor's stand at a fair, flown abroad, copied and samples of the copy be on display for orders shortly

after the fair. Secondly, modern marketing conditions make full use of registration unreasonably costly. Thirdly, the present system is often incapable of protecting precisely those features that distinguish good from bad design. And finally, present trading conditions make it most desirable that research into, and development of, new designs should be pressed forward on a far larger scale than was previously the case, thus increasing the importance of proper protection.

The precise form that protection for industry should take is a matter for further consideration, but we do believe that in some branches of industry, the manufacture of toy models in particular, the 'patent' approach (as opposed to the 'copyright' approach) is in modern conditions largely inappropriate: for one reason it must necessarily involve an unacceptable delay while the application is examined for novelty. In the wider field than that of models, we appreciate that the 'patent' approach may well still be the best, although its advantages may possibly be diminishing. We appreciate also that the adoption of the 'patent' approach necessarily involves the maintenance of a register of designs and a system of examination of applications, and further that a system of registration has its advantages even in those fields where the 'copyright' approach is adopted. Nevertheless we still feel that consideration should be given to improving the present system in three respects. Firstly, by allowing application for registration to be deferred until it has been ascertained that the design is worth putting on the market; secondly, by providing protection at least against direct reproduction pending examination of the application to register; and thirdly, by giving greater flexibility to the concepts of 'novelty' and 'originality' of a design, so as to permit of registration of designs that are aesthetically superior variants of older forms.

G. R. GOUDE

Secretary

British Toy Manufacturers' Association

93-94 Hatton Garden EC1

#### Prestige in engineering

SIR: The European Common Market looms ahead, and quite rightly you have, on more than one occasion, made reference to its importance in relation to the future trading of this country. Is the time not now overdue for the CoID to regard this matter with more urgency and encourage manufacturers to think more seriously about the design of engineering products?

With the experience gained by the CoID from operating in the domestic field in encouraging manufacturers to produce better domestic products, it would seem that to turn its attention in the direction of industrial goods is just a matter of procedure.

While it is difficult to assess the proportion which this class of goods will eventually take in our export market it must certainly be a very large one.

Furthermore it is also a very permanent one. This type of product, once sold overseas, will remain as an indication of British design for many years, and it is up to us to ensure that the standard is as high as possible.

In the future we shall be meeting increasing competition from the Italians and Germans. Both nations are very much aware of the serious need in this particular field, to produce products, not only technically efficient, but with the attention to detail, finish and

#### SLUMP

*continued from page 53*

men with no understanding of design whatsoever. Designs are bought in Lancashire either because they are familiar and therefore minimise the buyer's risk, or because they are so violently different that they can be sold as novelty. A designer catering for this process must therefore produce either straightforward rehashes of 'Lancashire traditional', or space-comic caricatures of 'contemporary'. Bosanquet once said that good aesthetic judgment springs from the capacity to discriminate between the significant and the merely spectacular. The inability of the typical design buyer to do just this means that the designer who wishes to sell to him is driven to dull plagiarism or crude sensationalism.

This situation has serious consequences. Either the gifted, sensitive designer avoids the textile industry altogether, or he compromises his own aesthetic standards and stultifies his talent in the process. In either case Lancashire cuts itself off from the well-springs of creative ability which it so badly needs. Traditional designs embodying the national flavour, so beloved in export markets, suffer from hackneyed interpretation. Modern design, design which constitutes the living tradition, our own contribution to the national heritage, never begins, because the requisite honesty of purpose is entirely lacking. Sensitive study and loving execution have no place in the frenzied search for gimmicks.

Britain stands today at the cross roads of destiny. Are we, in a mighty new manifestation of the genius of our people, to show the world that we who pioneered the Industrial Revolution know how to tame it? Are we going to show that an advanced industrial society can mass produce fine things? Are we going to demonstrate that art, the supreme emanation of the individual spirit, can flourish in a society where technology increasingly demands that individual satisfactions be determined by specialist decision? Or are we going to drown in the mistakes of our forefathers, shackled to processes of industrial decision which are essentially Philistine?

Those who seek answers to these questions should study very carefully the predicament of Lancashire, where, among the dark satanic mills, the captains of our once greatest industry are in desperate straits. Tomorrow the whole of British industry may be in the same boat, crying for help, bailing furiously and suicidally ignoring the hole in the bottom of the boat and the bung which is ready to hand. JOHN T. MURRAY

general appearance which will help to sell them on increasingly critical world markets.

Would it not be an encouragement to manufacturers to stage an exhibition of such products at The Design Centre? Designs in this field still lags behind, but good examples must be available in sufficient quantity to make this possible.

I hope that with the new appointment of a CoID industrial officer for the engineering industries we may see some results.

LESLIE J. ROBERTS

1 Tollmead

Esher Green, Surrey

*continued on page 71*



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*said the pundits*

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## LETTERS

### Long distance

SIR: In the article *Communication techniques* by Peter E. M. Sharp in DESIGN for August we noted with interest the picture and reference to our Mufax Business Machines on pages 44 and 45.

We are very disturbed, however, at the sentence which reads, "The present limitation of some 30 miles is likely to be overcome shortly..." As far as Muirhead facsimile machines are concerned, there is no limitation of distance.

One of the many outstanding examples of long-distance facsimile communication using Muirhead equipment is the Canadian Weatherfax system. From Dorval in the east of Canada to Vancouver on the west coast, large maps carrying meteorological information are transmitted by telephone line. This system has been operating successfully since 1953.

Therefore Muirhead facsimile systems are not limited by distance.

B. ROWLAND HILL  
Muirhead & Co Ltd  
Beckenham, Kent

Mr Sharp writes: As far as Muirhead facsimile is concerned I stand corrected. However my point that Britain is slow to accept sensible communications is emphasised by the fact that the only user of this equipment over the 30-mile distance in this country is the Air Ministry Meteorological Department.

### Reluctant competition

SIR: In his article, *Competitive market for British goods* (DESIGN July pages 53-55) Charles Winckley says that "It is incomprehensible that there is no British pavilion at the Rand Show."

The reason for this is quite simple. British firms have in the past exhibited at the Rand Show through their South African subsidiaries and agents in the industrial sections, so that a large part of the show consisted of goods produced directly or indirectly by Britain. It has been the view of the British Government and industry that participation in this way was a more satisfactory way of doing business than to collect all the British goods into one pavilion and encourage competition between nations.

In view, however, of the action of other countries in setting up their own national pavilions at the Rand Show, it has been decided, with reluctance, that we have no alternative but to follow suit and on February 4 an announcement that the British Government was to build a pavilion for the show in 1959 was made in London and Johannesburg.

M. L. G. BALFOUR  
Export Publicity & Fairs Office  
Board of Trade, SW1

### Vision and trapped hands

SIR: In support of your excellent article *Ergonomics versus styling in cars* (DESIGN July pages 29-35) and in answer to Philip Copelin's letter from Vauxhall Motors (DESIGN October page 69); I, at least, know one person who trapped and very badly hurt a hand in exactly the way described!

JAMES LEWIS  
11a Denbigh Road, W11

SIR: I was amazed by the letter of the chief stylist of Rootes (DESIGN October page 69), and his claim that the Rootes Group has given utmost consideration to pas-

## BOOKS

senger convenience and safety. The new *De Luxe* Hillman has the speedometer nearer the passenger than the driver, entailing some 50° of eye movement, to the left on the driver's part, and I have heard it mentioned that this crazy speedometer position is required for export cars and therefore a different position would be necessary for the home market.

Although I own a Hillman, as one concerned with vision in my job I would not consider buying a new car which did not have instruments 'binnaced' behind the steering wheel, a position which allows less eye movement and therefore less ocular fatigue.

PATRICK N. COURLANDER  
56 George Street, Richmond

## BOOKS

### Handwriting, a national survey

Reginald Piggott, George Allen & Unwin Ltd, £1 5s

The legible literate of today is either writing an old-fashioned hand with a modern ball-point pen, or copying a 400-year old style with a sharp edge pen. How odd that progress should have stopped dead at one of the most important and universal functions of civilised life - handwriting and its instruments.

This book includes a constructive "plan for better modern handwriting" with a study of the model alphabet and illustrated details of present-day pens, inks and papers, together with over 400 examples of handwriting taken from the 1956-57 survey (which attracted a practical response from more than 25,000 people in eight weeks) to provide much food for critical thought. The survey replies, first classified according to age, sex, occupation, left- or right-handed, slope of, and style of writing, legibility ratio, colour of ink, type of paper and pen used, are further analysed to show in graph form the comparative proportions of these classifications in 26 groups of different occupations. Could you deduce a 'male, 75, Anglican cleric' from his broad nib style, or a 'crop husbandry assistant' from his ball-point - or even an 'ambidextrous sugar mill director'? Read this book and try. (*What's my Line* panellists and handwriting enthusiasts especially!)

M-J. LANCASTER

### Penrose annual, Vol 52

Edited by Allan Delafons, Lund Humphries, £2 2s

*Penrose* 52 is a very handsome book. But it seems also something of a problem child, a curate's egg; and of course that may well be why it is still very much alive. To put it in concrete terms; some of it one feels must certainly be kept somehow because it is material of permanent value, but much else is ephemeral detail, incomplete in itself, journalism for which, once read, one grudges precious shelf room. Should one tear *Penrose* apart then? Surely not. Perhaps the feeling is bound up with *Penrose*'s aim, if that is the word to use.

Of course we know its enormous range is unique and invaluable, and in the rutted field of the graphic arts any cross-fertilisation of ideas is especially welcome. But is this the right sort of cross-fertilisation? Is a designer helped by this year's volley of highly technical detail on gravure dots, colour theory and so on (he sometimes wonders what happened to Collobloc, etc, etc or whatever was trumpeted last year or the year before)? Or is a technically based reader much helped by reading about the teleological and aesthetic criteria invoked by David Thomas? Perhaps the phrase

"design in the graphic arts", used in an editorial note to describe the first section only, could be reinterpreted in its proper sense of the technical as well as visual determinants of a planned product, and used as the aim for the whole book. By this standard some articles would be seen as irrelevant and, oddly enough, it is these that one feels instinctively are the ones that do not demand the permanence of the bookshelf. By any such standard, the articles in this volume on the Officina Bodoni by Hans Schmoller, C. F. A. Voysey by Peter Floud and type design by S. H. Hartz are of outstanding value.

Of the articles concerned with modern techniques, an account of Ordnance Survey methods has implications for those concerned with other lithographic work, even though another on bank note engraving is, one hopes, of more academic interest. There is interesting reportage on such diverse subjects as the Ecole de Lure, advertising art, magazines, management training, possibilities with xerographic lithography and much else of course, including a most useful book list to get oneself up-to-date with, from St Bride's. There are the usual samples and illustrations, many of very high standard, though one remembers they are in a sense too good to be true, being unimpeded by the tiresome presence of a customer.

The whole effect of *Penrose* is of a vast crowding mass, seriously conceived, extremely efficiently organised and very decently presented; but it is a daunting mass nevertheless. Certainly, on coming to it after some time spent among the printing of a century ago, *Penrose* leaves an odd impression - of enormous width of interest, but of superficiality, and a lack of cohesion between the parts; a reflection of life today perhaps.

CHRISTOPHER BRADSHAW

### Correction

DESIGN September page 69: In the advertisement for *Flexwood*, the name of the manufacturer is Alexandria Trading Corporation Ltd, not Flexwood Ltd as stated.

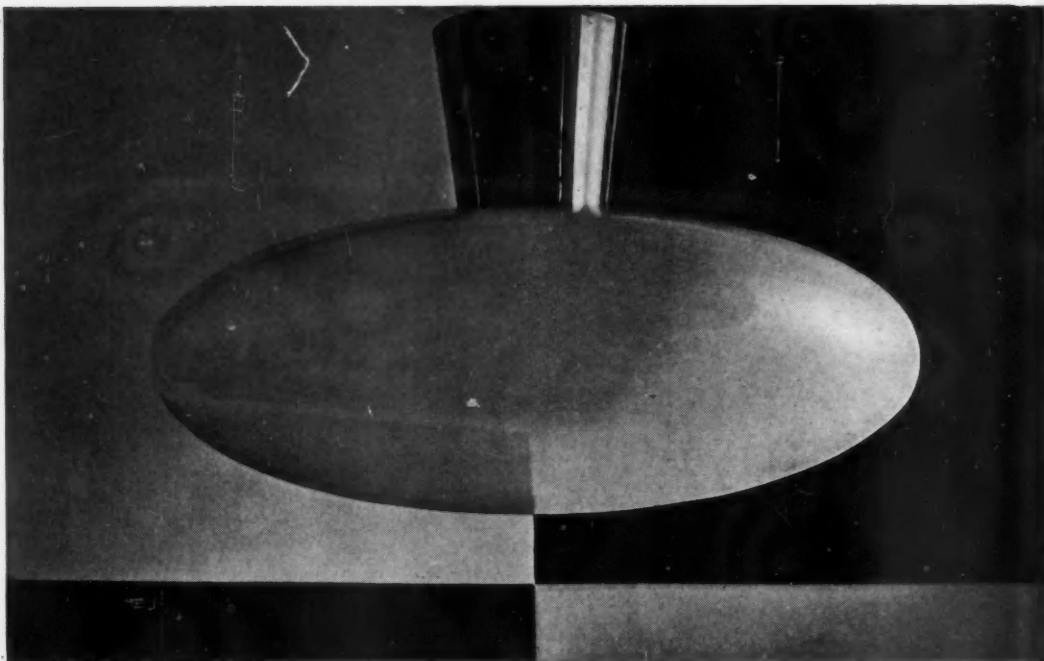
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Turner Brothers (Birmingham) Ltd, Cleveland St, B'ham 19  
Whiteley Electrical Radio Co Ltd, Mansfield, Notts  
Jas Williamson & Son Ltd, 39-41 Cannon St, EC4

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a NOEL VILLENEUVE design



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\* This illustration shows just how well a Royal Sovereign China-graph pencil writes on glass.



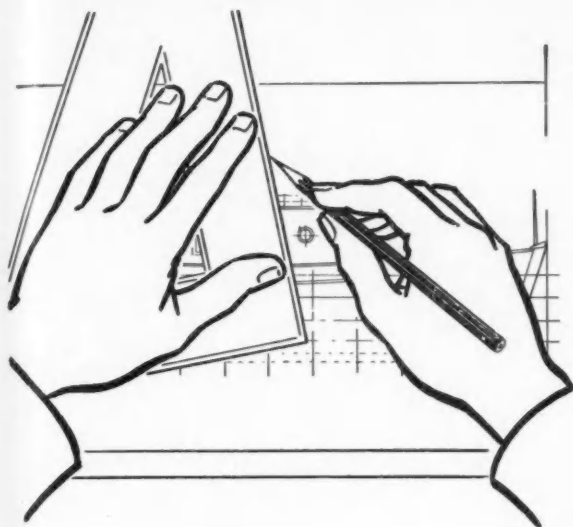
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or nearly but bang on the dot every  
time.

The leads must hold their points  
and flow smoothly throughout a long line –  
no crumbling or 'clinkers' mark you! –  
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so you won't find ghost lines in prints  
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fact you can tell from a print when it is  
my drawing – the print's always first class."

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"Venus drawing pencils of course, the ones  
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do you think I keep up my high standard?"

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\* VENUS Drawing Pencils are made in 17 accurate  
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## Advertising Review

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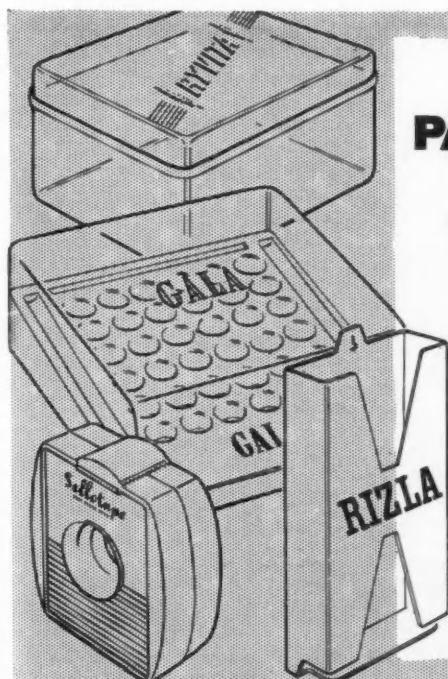
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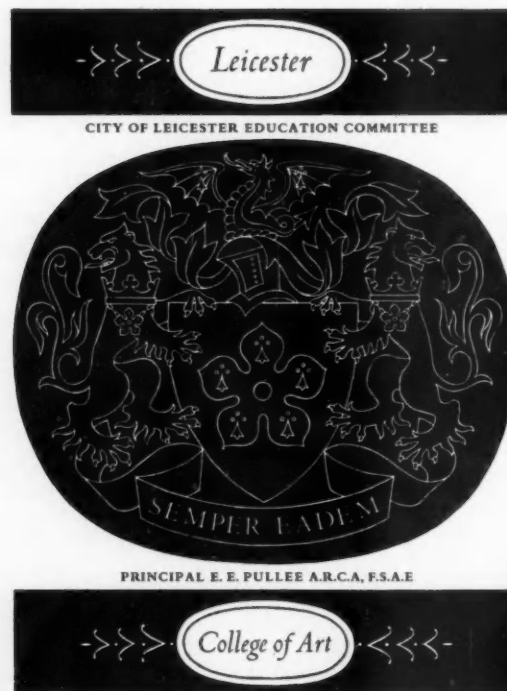
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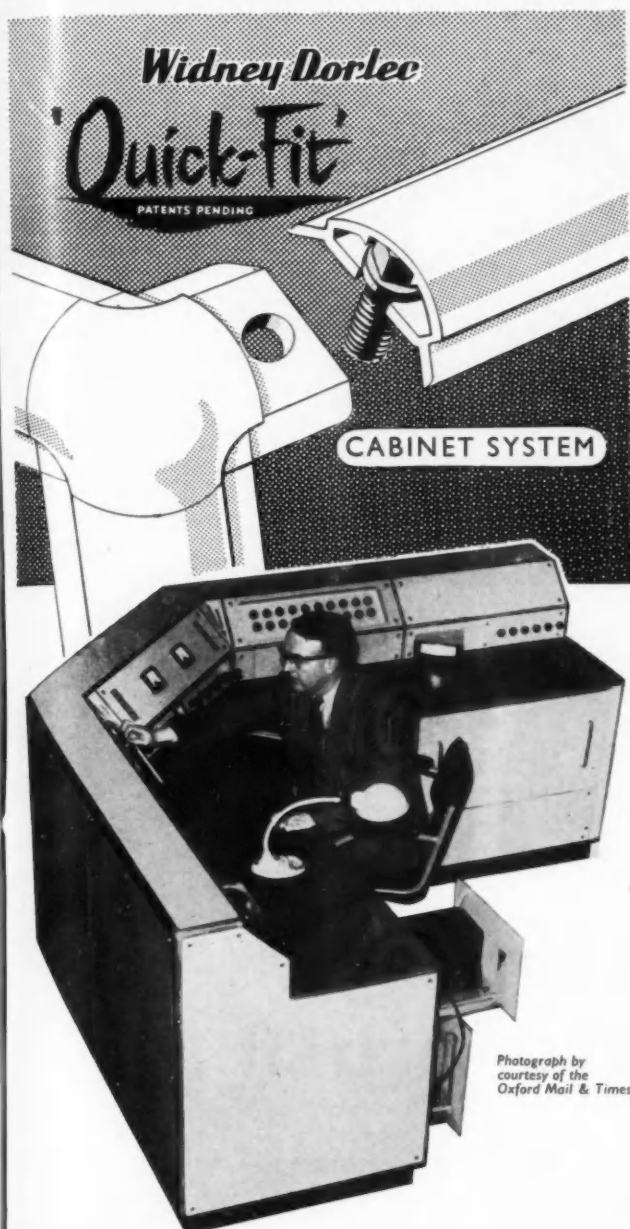
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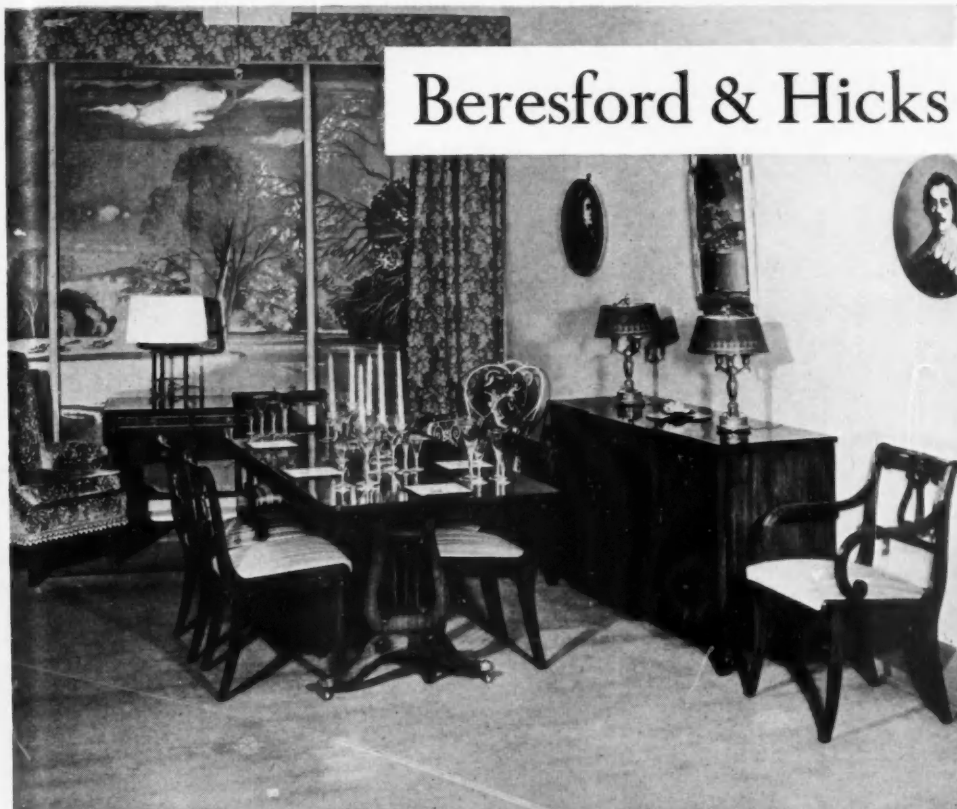
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## RECORD OF DESIGNERS

MANUFACTURERS requiring the services of designers, whether for staff positions or in a consultant capacity are invited to apply to the *Record of Designers*, CoID, London, or to the CoID, Scottish Committee, 46 West George Street, Glasgow C2. They can obtain a short list of designers suitable to their particular purposes, which should be explained in some detail. This service is free to British manufacturers and incurs no obligation.

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